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The published writings

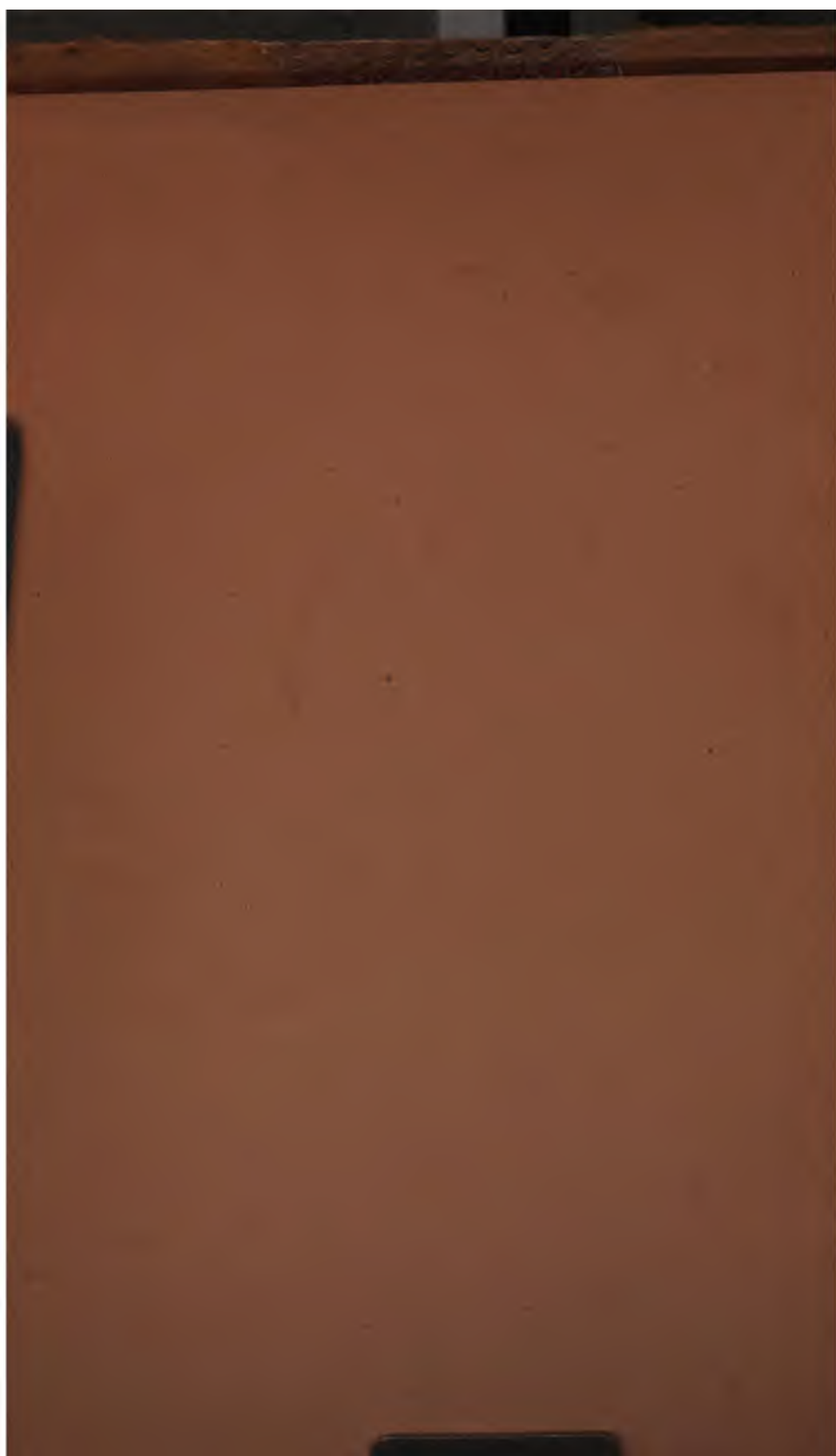
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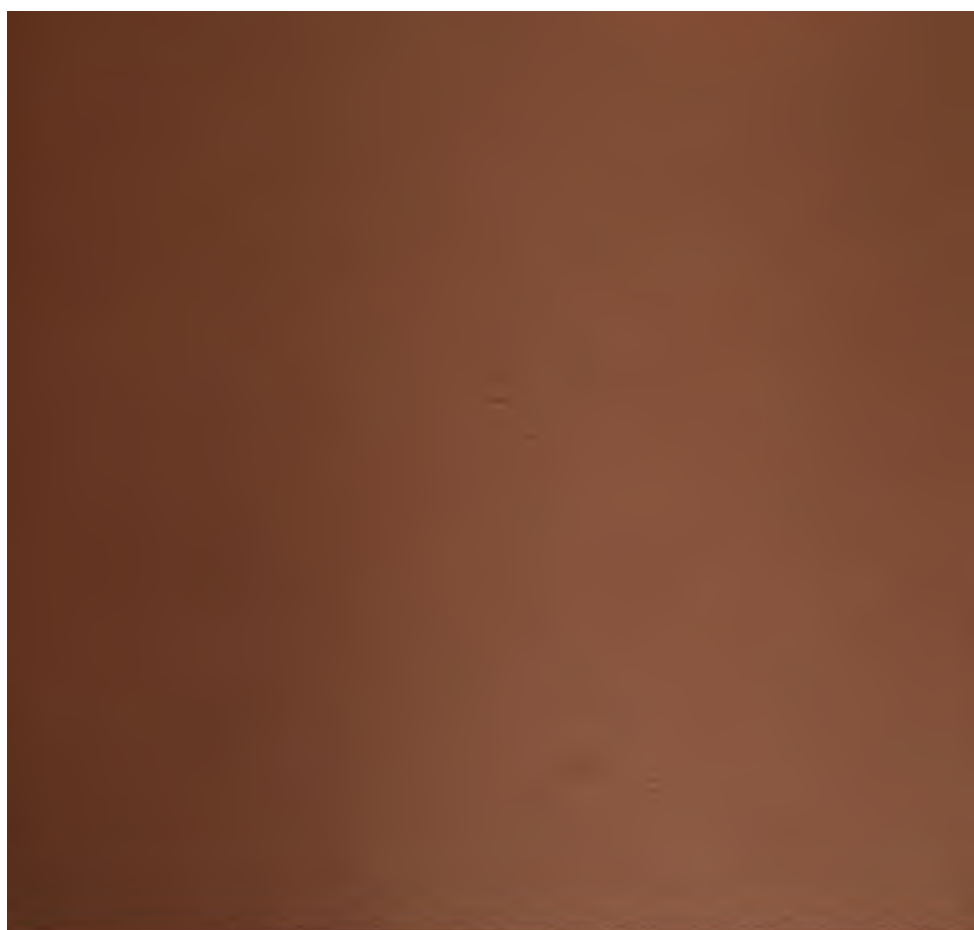


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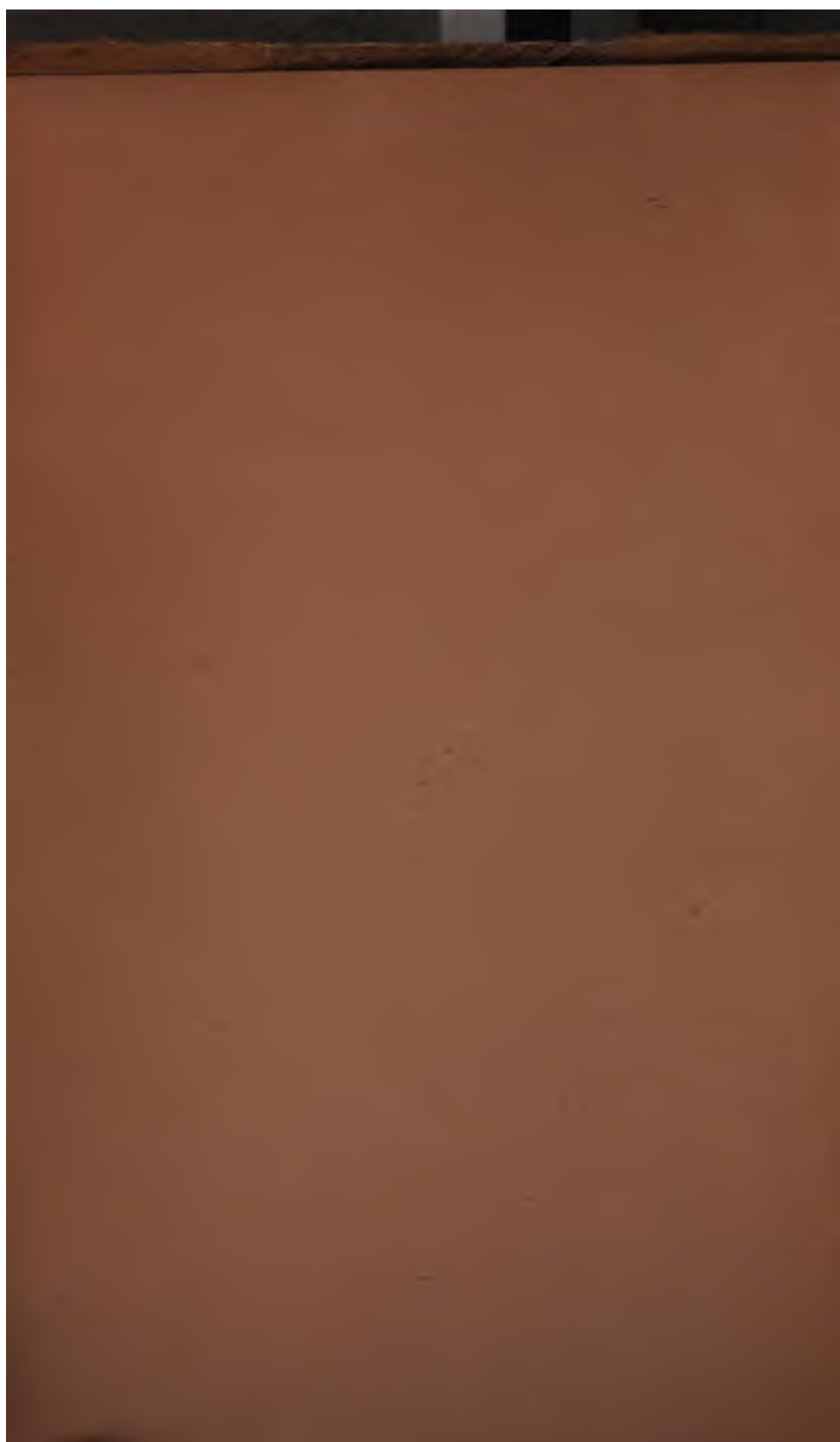
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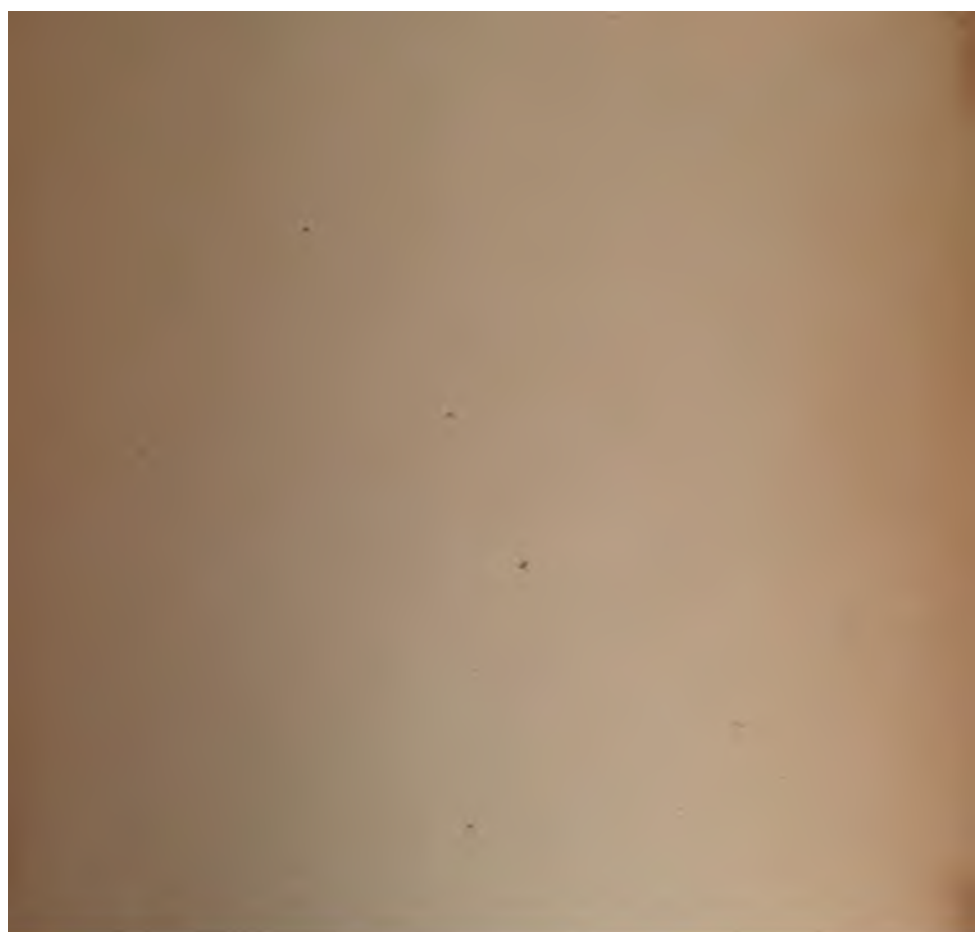
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# BULLETIN

OF THE

UNITED STATES NATIONAL MUSEUM.

No. 20.

BIOGRAPHIES OF AMERICAN NATURALISTS.—I. THE PUBLISHED  
WRITINGS OF SPENCER FULLERTON BAIRD, 1843-1897.

BY

GEORGE BROWN GOODE,

ASSISTANT DIRECTOR OF THE NATIONAL MUSEUM.

WASHINGTON:  
GOVERNMENT PRINTING OFFICE,  
1883.



**Department of the Interior:**

**U. S. NATIONAL MUSEUM.**

**— 23 —**

# **BULLETIN**

**OF THE**

**UNITED STATES NATIONAL MUSEUM.**

**No. 20.**

**PUBLISHED UNDER THE DIRECTION OF THE SMITHSONIAN INSTITUTION.**

**WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1883.**





*A11428*  
ADVERTISEMENT.

This work is the twenty-third of a series of papers intended to illustrate the collections of natural history and ethnology belonging to the United States, and constituting the National Museum, of which the Smithsonian Institution was placed in charge by the act of Congress of August 10, 1846.

It has been prepared at the request of the Institution, and printed by authority of the honorable Secretary of the Interior.

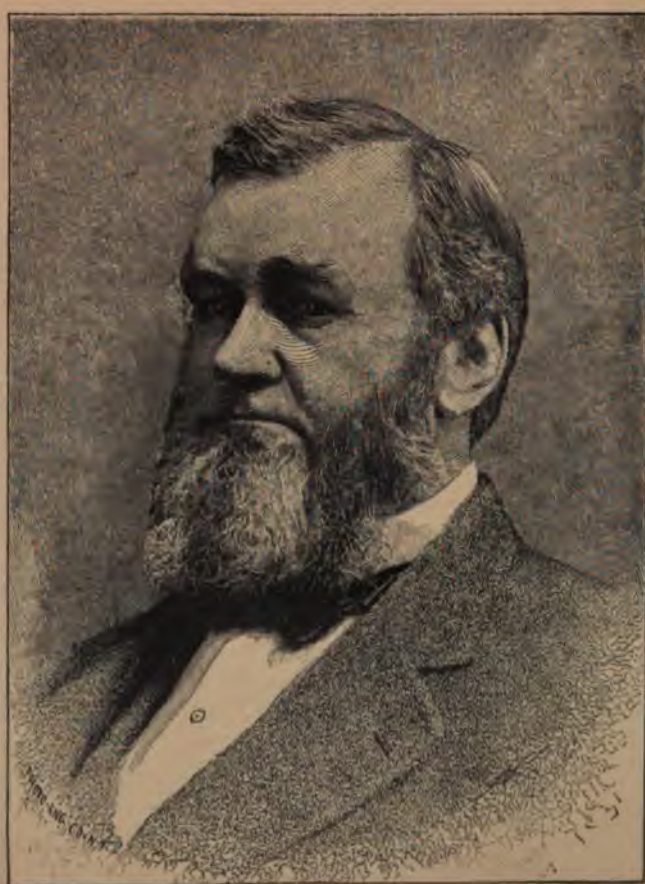
SPENCER F. BAIRD,

*Secretary of the Smithsonian Institution.*

SMITHSONIAN INSTITUTION,

*Washington, February 1, 1883.*

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The portrait of Professor Baird, printed upon the preceding page, was intended for a frontispiece to the Bibliography of his writings issued as Bulletin xx of the U. S. National Museum.

Professor Baird having refused to allow it to be inserted in this work, it will be distributed separately to as many of the recipients of the Bibliography as it is practicable to reach. Those who receive it are requested to attach it permanently to copies of the book.

The plate was prepared by the Photo-engraving Company of New York City, whose courtesy is hereby acknowledged.

G. BROWN GOODE.

WASHINGTON, April 1, 1883.



**BIOGRAPHIES OF AMERICAN NATURALISTS.**

**I.**

**THE PUBLISHED WRITINGS**

**OF**

**JENNER FULLERTON BAIRD,**

**1843-1882.**

**BY**

**GEORGE BROWN GOODE,**

**ASSISTANT DIRECTOR OF THE NATIONAL MUSEUM.**



**WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1883.**





## PREFATORY NOTE.

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The writer, since 1874, has been collecting materials for a work to be entitled "An Index Bibliography of American Ichthyology," the object of which will be to render as easily accessible as possible to the investigator and the student the literature relating to American fishes. Its scope embraces not only anatomical and descriptive ichthyology, but the literature of the fisheries, angling, fishery legislation and diplomacy, fishery statistics, and the commerce of the fisheries. References will be made not only to separate works and papers in scientific periodicals and the transaction of societies, but to all accessible articles and paragraphs in narratives of voyages and books of travel in America, and to pertinent references in literary and sporting periodicals. Briefly, it is the intention to enumerate by title every writing ever published which refers to American fish or fisheries. The work will be called an "index-bibliography," because it is intended to form a comprehensive index to the works it describes. Each title will be followed by a brief descriptive or critical paragraph, which will supplement the title and indicate in a general way the scope of its author's effort. In the case of an important paper a synopsis of its contents may be given. Under each descriptive paper will be printed the names of the new species described, with the locality whence the types were obtained, and the page of the reference. In important works, containing critical remarks, similar references may be given for each species discussed. References to every engraving published will be made.

The pressure of other engagements has delayed the completion of this work, which it was at first intended to publish in 1876. It is now expected that it may be finished in 1884. Titles of works published before July, 1884, will be included. In the mean time it is proposed, from time to time, to publish special bibliographies of the writings of the most prominent naturalists, for convenience of current reference, and to invite criticism of methods, corrections of any kind, and the co-operation of those who are interested in the successful completion of the undertaking.

The first of these special bibliographies is now presented. No one will be likely to question the propriety of selecting for its subject the

works of Professor BAIRD, since it is he who, more than any one else, has carried on the work of identifying and describing the material in the National Museum, and since he has probably been one of the most prolific of all contributors to the systematic zoology of the United States.

The writer has in preparation special bibliographies of CHARLES GIRARD and THEODORE GILL, but it is possible that before these can be published others, by other writers, will be assigned a place in the series. The one now most nearly ready for publication is that of ISAAC LEA, prepared by Mr. Newton P. Scudder.

WASHINGTON, *January* 1, 1882.

## BIOGRAPHICAL SKETCH OF SPENCER FULLERTON BAIRD.

### ANALYSIS.

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- I. Outline of his public career.
- II. Honors and dignities.
- III. Ancestry and development of character.
- IV. Early friendships and their influence.
- V. Analysis of his work and its results.
- VI. Contributions to science and scientific literature.
- VII. Educational and administrative works.
- VIII. Work as Commissioner of Fisheries.
- IX. Epilogue.

#### I.

Spencer Fullerton Baird was born in Reading, Pennsylvania, February 3, 1823. In 1834 he was sent to a Quaker boarding-school kept by Dr. McGraw, at Port Deposit, Maryland, and the year following to the Reading Grammar School. In 1836 he entered Dickinson College, and was graduated at the age of seventeen. After leaving college, his time for several years was devoted to studies in general natural history, to long pedestrian excursions for the purpose of observing animals and plants and collecting specimens, and to the organization of a private cabinet of natural history, which a few years later became the nucleus of the museum of the Smithsonian Institution. During this period he published a number of original papers on natural history. He also read medicine with Dr. Middleton Goldsmith, attending a winter course of lectures at the College of Physicians and Surgeons, in New York, in 1842. His medical course was never formally completed, although in 1848 he received the degree of M. D., *honoris causa*, from the Philadelphia Medical College. In 1845 he was chosen professor of natural history in Dickinson College, and in 184— his duties and emoluments were increased by election to the chair of natural history and chemistry in the same institution. In 1848 he declined a call to the professorship of natural science in the University of Vermont. In 1849 he undertook his first extensive literary work, translating and editing the text for the "Iconographic Encyclopedia," an English version of Heck's *Bilder Atlas*, published in connection with Brockhaus's *Conversations Lexikon*.

July 5, 1850, he accepted the position of Assistant Secretary of the Smithsonian Institution, and October 3, at the age of twenty-seven years, he entered upon his life work in connection with that foundation—"the increase and diffusion of useful knowledge among men."\*

His work as an officer of the Institution will be discussed more fully below. It was constant and arduous, but did not prevent the publication of many original memoirs, among the most elaborate of which are the Catalogue of North American Serpents (1853); the "Birds of North America" (1858); the "Mammals of North America" (1859); the "Review of North American Birds" (1864-'66); the "Geographical Distribution of North American Birds" (1865); the History of North American Birds, in connection with Thomas M. Brewer and Robert Ridgway (1874), and the preparation of numerous official reports. From 1870 to 1878 he was scientific editor of the periodicals published by Harper Brothers, of New York, and the author of their yearly cyclopedia of science, entitled "The Annual Record of Science and Industry." In 1871 he was appointed by President Grant to the position of United States Commissioner of Fish and Fisheries, an unsalaried office, to the duties of which he has for eleven years devoted a large portion of his time. In 1876 he served as one of the Government Board of Commissioners to the International Exhibition at Philadelphia, and was also a member of the international jury. In 1877 he was present, as advisory counsel, at the session of the Halifax Fishery Commission.

In May, 1878, after the death of Professor Henry, he was, by the unanimous vote of the Regents, elected Secretary of the Smithsonian Institution.

## II.

Professor Baird, in 1856, received the degree of Doctor of Physical Science from Dickinson College, and in 1875 that of Doctor of Laws from Columbian University. He was, in 1878, awarded the silver medal of the Acclimatization Society of Melbourne; in 1879 the gold medal of the *Société d'Acclimatation* of France, and in 1880 the Erster Ehrenpreis of the *Internationale Fischerei Ausstellung* at Berlin, the gift of the Emperor of Germany. In 1875 he received from the King of Norway and Sweden the decoration of "Knight of the Royal Norwegian Order of St. Olaf." He was one of the early members of the National Academy of Sciences, and ever since the organization has been a member of its council. In 1850 and 1851 he served as permanent secretary of the American Association for the Advancement of Science, and since 1878 has been one of the trustees of the Corcoran Gallery of Art in Washington. He has been president of the Cosmos Club, and for many years a trustee of Columbian University. Among his honorary relations to numerous scientific societies of the United States and other countries are included those of foreign membership in the Linnæan

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\* The motto of the Smithsonian Institution

Society of London, and the Zoological Society of London, honorary membership in the Linnæan Society of New South Wales, and corresponding membership in the *K. K. Zoologisch-botanische Gesellschaft*, Vienna; the *Sociedad de Geographia*, Lisbon; the New Zealand Institute, the *Koninklijke Natuurkundige Vereeniging in Nederlandsch Indië*, Batavia; the *Magyar Tudományos Akadémia*, Buda-Pesth; the *Société Nationale des Sciences Naturelles*, Cherbourg; the *Academia Germanica Naturæ Curiosorum*, Jena; the *Naturforschende Gesellschaft*, Halle; the *Naturhistorische Gesellschaft*, Nuremberg; the Geographical Society of Quebec; the Historical Society of New York; the *Deutsche Fischerei Verein*, Berlin.

The nomenclature of zoology contains many memorials of his connection with its history. A partial enumeration shows that over twenty-five species and one genus of fishes bear his name.

A post-office in Shasta County, California, located near the McCloud River Salmon Hatching Station of the United States Fish Commission, was named "Baird" by the Postmaster-General in 1877.

### III.

His ancestry upon the one side was English, upon the other Scotch and German. His paternal grandfather was Samuel Baird, of Pottstown, Pa., a surveyor by profession, whose wife was Rebecca Potts. The Bairds were from Scotland, while the Potts family removed from Germany to Pennsylvania at the close of the seventeenth century. His great grandfather on the mother's side was the Rev. Elihu Spencer, of Trenton, one of the war preachers of the Revolution, whose patriotic eloquence was so influential that a price was set on his head by the British Government; his daughter married William M. Biddle, a banker, of an English family for many generations established in Pennsylvania, and identified with the banking interests of Philadelphia. Samuel Baird, the father of the subject of this sketch, established himself as a lawyer at Reading, Pennsylvania, and died when his son was ten years old. He was a man of fine culture, a strong thinker, a close observer, and a lover of nature and of out-of-door pursuits. His traits were inherited by his children, but especially by his sons Spencer and William. The latter, who was the elder, was the first to begin collecting specimens, and as early as 1836 had in hand a collection of the game-birds of Cumberland County. His brother soon became his companion in this pursuit, and six years later they published conjointly a paper entitled "Descriptions of two species, supposed to be new, of the Genus *Tyrannula* Swainson, found in Cumberland County, Pennsylvania." \*

There are still in the museum at Washington specimens of birds prepared by these boys forty-five years ago by a simple process of evisceration, followed by stuffing the body-cavities full of cotton and arsenical

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\*See list on a subsequent page.



soap. The brother, William M. Baird, diverged into other paths, and at the time of his death in 1872 was United States collector of internal revenue at Reading.

The inheritance of a love of nature and a taste for scientific classification, the companionship of a brother similarly gifted, tended to the development of the young naturalist, and a still more important element was the encouragement of a judicious mother by whom he was permitted to devote the five years immediately following his graduation to his own devices and plans instead of being pushed at once into a profession. In 1841, at the age of eighteen, we find him making an ornithological excursion through the mountains of Pennsylvania, walking 400 miles in twenty-one days, the last day 60 miles between daylight and rest. The following year he walked more than 2,200 miles. His fine physique and consequent capacity for work are doubtless due in part to his outdoor life during these years.

#### IV.

An important stimulus to the efforts of this young naturalist was the friendship which he formed as early as 1838 with Audubon, with whom he was for many years in correspondence, and who, in 1842, gave to him the greater part of his collection of birds, including most of his types of new species. Young Baird contributed many facts and specimens for the History of North American Quadrupeds at that time in preparation, as well as to the Ornithological Biography, and was only prevented by ill health from accompanying Audubon as his secretary on his six months' expedition to the Yellowstone in 1840. In those days were formed many of the friendships and partnerships with scientific men which influenced his after life. Among his early correspondents were George N. Lawrence (1841), John Cassin (1843), John G. Morris (1843), Thomas M. Brewer (1845), and S. S. Haldeman (1845). In 1847 he met Agassiz, then just arrived from Switzerland in company with Desor and Girard. At this time or a year later was projected the work of Agassiz and Baird on "The Fresh-water Fishes of the United States," which was, however, never published, although a number of illustrations and some pages of text were elaborated. In 1843 he translated Ehrenberg's "Corals of the Red Sea" for J. D. Dana, who was then preparing his reports for the United States exploring expedition. As early as 1846 we find him engaged in the preparation of a synonymy of North American birds, and visiting Boston to consult the libraries of Amos Binney and the Boston Society of Natural History for works not possessed by the Philadelphia Academy of Natural Sciences. This material was utilized twelve years later in the "Birds of North America."

As professor of natural history in Dickinson College he taught the seniors in physiology, the sophomores in geometry, and the freshmen in zoology. He found time, however, to carry on the works begun in pre-

vious years, and to make in summer extended collecting expeditions: To the Adirondacks in 1847; to Ohio in 1848, to collect, in company with Dr. Kirtland, from the original localities of the types, the fishes described by him in his work on the fishes of Ohio; to the mountains of Virginia in 1849; and to Lake Champlain and Lake Ontario in 1850.

When in 1850, upon the urgent recommendation of the late George P. Marsh, he was elected an officer of the Smithsonian Institution, he brought with him to Washington methods of work, developed in his personal experience, which became at once the methods of the establishment, and are still employed in many of its departments.

## V.

There may be noted in the career of Professor Baird several distinct phases of activity, namely, (1) a period of twenty-six years, 1843-1869, occupied in laborious investigation and voluminous publication upon the vertebrate fauna of North America; (2) forty years of continuous contribution to scientific literature, of which at least ten were devoted to scientific editorship; (3) five years, 1845-1850, devoted to educational work; forty years, 1842-1883, devoted to the encouragement and promotion of scientific enterprises, and the development of new workers among the young men with whom he was brought into contact; (5) thirty-three years, 1850-1883, devoted to administrative work as an officer of the Smithsonian Institution, and in charge of the scientific collections of the government—twenty-eight as principal executive officer and five as Secretary and responsible head; (6) twelve years as head of the Fish Commission, a philanthropic labor for the increase of the food-supply of the world, and incidentally in promoting the interests of biological and physical investigation of the waters.

## VI.

The extent of Professor Baird's contributions to science and scientific literature may be at least partially comprehended by an examination of the succeeding pages of the present work. The list of his writings is complete to the end of the year 1882, and contains 1,063 titles. Of this number 775 are brief notices and critical reviews contributed to the "Annual Record of Science and Industry," while under his editorial charge, 31 are reports relating to the work of the Smithsonian Institution, 7 are reports upon the American fisheries, 25 are schedules and circulars officially issued, and 25 are volumes or papers edited. Out of the remaining 200 the majority are formal contributions to scientific literature.

It seems scarcely necessary to remark that most of the official reports above referred to, as well as many of the brief articles in the *Annual Record*, contain important original matter.

Nineteen of the descriptive papers were published conjointly with Charles Girard, while the most elaborate work, "The Birds of North America," was prepared in its first edition with the aid of Messrs. Cassin and Lawrence, and in its second with that of Messrs. Brewer and Ridgway.

Of the total number of papers enumerated in the list 73 relate to mammals, 80 to birds, 43 to reptiles, 431 to fishes, 61 to invertebrates (these being chiefly reviews), 16 to plants, 88 to geographical distribution, 46 to geology, mineralogy, and paleontology, 45 to anthropology, 31 to industry and art, 109 to exploration and travel.

While the number of new species described does not necessarily afford any clew to the value of the work accomplished, it may not be uninteresting to refer to it as an indication of the pioneer work which it was necessary to do even in so prominent a group as the vertebrates. I note among mammals 49, birds 70, reptiles 186, fishes 56. Forty-nine of 220, or nearly one-fourth, of the mammals discussed in the "Mammals of North America," were there described for the first time. In the catalogue of serpents not more than 60 per cent. had been named, and in in preparation for studying the specimens, each was carefully ticketed with its locality, and then the 2,000 or more individuals were thrown indiscriminately into one great pile, and the work of sorting them out by resemblances was begun. Not the least valuable have been the numerous accurate figures of North American vertebrates, prepared under Professor Baird's supervision. These include representatives of 170 species of mammals and 160 species of reptiles, besides still many hundreds of birds.\*

## VII.

Passing to the consideration of the influence of Professor Baird on the encouragement of scientific enterprise, it seems scarcely necessary to call attention to the manner in which this influence has been exerted, since the relation of the Smithsonian Institution to scientific exploration, particularly in the lines of natural history and ethnology, is a part of the scientific history of the country, and since this department of the work of the Institution was always from its inception under the direction of the assistant secretary. The first grant made by the Institution for scientific exploration and field research was in 1848 to Spencer F. Baird, of Carlisle, for the exploration of the bone caves and the local natural history of Southeastern Pennsylvania.

From the start the Department of Explorations was under his charge; and in his reports to the Secretary, published year by year in the annual report of the Institution, may be found the only systematic record of government explorations which has ever been prepared. From 1850 to 1860 several extensive government expeditions were sent to

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\* In the bibliography

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the western territories, and it became the duty of Professor Baird to enlist the sympathies of the commanders of these expeditions in the objects of the Institution, to supply them with all the appliances for collecting, as well as with instructions for their use, and also in most cases to organize the natural history parties, nominate the collectors, employ and supervise the artists in preparing the plates, and in many instances to edit the zoological portions of the reports.

The fitting out of such expeditions was only a small part of the work; from the beginning until now there have been numerous private collectors, deriving their materials, their literature, and, to a considerable extent, their enthusiasm from the Smithsonian Institution, and consequently in correspondence with its officers. The Smithsonian "Instructions to Collectors," which has passed through several large editions, as well as numerous circulars written with a similar purpose, were prepared by Professor Baird in connection with this department of his work.

As a result of this extensive work of organization, a large number of young men have been trained as collectors and observers, and among them not a few have become eminent in various departments of science.

In addition to this special branch of his work, the assistant secretary had, from the start, the charge of certain departments of the routine work of the Institution; the system of international exchanges, for instance, which had ever been one of the leading objects of the Smithsonian Institution, was organized by him in its details. His first task, after entering upon his duties, was to distribute the second volume of the "Smithsonian Contributions to Knowledge." Already in connection with his private enterprises he had developed a somewhat extensive system of exchanges with European and American correspondents, and the methods thus established were expanded for the wider needs of the Institution. The main duty of the assistant secretary, however, was the development of the natural history collections. As has already been indicated, the private collection which he brought with him to Washington formed the nucleus of the Smithsonian museum. The only specimens in possession of the Institution at the time of his arrival were a few boxes of minerals and plants. The collections of the Wilkes Exploring Expedition, which constitute the legal foundation of the National Museum of the United States, were at that time under the charge of the National Institute; and, although by the act of incorporation the Smithsonian Institution was the legal custodian of the national cabinet of curiosities, it was not until 1857 that the Regents finally accepted the trust and the National Museum was definitely placed under the control of the Smithsonian Institution and transferred to its building. Until this time Congress had granted no funds for the support of the Smithsonian cabinets, and the collections had been acquired and cared for at the expense of the endowment fund. They had, however, become so

large and important in 1857 that the so-called "National Collection" at that time acquired were small in comparison.

The National Museum then had a double origin. Its actual although not its legal nucleus was the collection gathered in the Smithsonian building prior to 1857. Its methods of administration, which were in fact the very same that had been developed by Professor Baird in Carlisle as early as 1845, are those which are still in use, and which have stood the test of thirty years without any necessity for their modification becoming apparent. In the bibliography below is reprinted from the fifth annual report of the Smithsonian Institution, now exceedingly rare, a report by the assistant secretary in charge of the natural history department for the year 1850, which enumerates the specimens belonging to the Museum on January 1, 1851, including a full account of his own deposit.

Having thus almost from the very outset been associated with Professor Henry in the organization of the Smithsonian Institution, his course since his accession to the secretaryship has been a consistent continuation of that which had for twenty-eight years been adopted.

#### VIII.

The work of the Fish Commission, in one of its aspects, may perhaps be regarded as the most prominent of the present efforts of the government in aid of aggressive biological research.

On the 9th of February, 1874, Congress passed a joint resolution which authorized the appointment of a Commissioner of Fish and Fisheries. The duties of the Commissioner were thus defined: "To prosecute investigations on the subject (of the diminution of valuable fishes) with the view of ascertaining whether any and what diminution in the number of the food-fishes of the coast and the lakes of the United States has taken place; and, if so, to what causes the same is due; and also whether any and what protective, prohibitory, or precautionary measures should be adopted in the premises, and to report upon the same to Congress."

The resolution establishing the office of Commissioner of Fisheries required that the person to be appointed should be a civil officer of the government, of proved scientific and practical acquaintance with the fishes of the coast, to serve without additional salary. The choice was thus practically limited to a single man. Professor Baird, at that time assistant secretary of the Smithsonian Institution, was appointed and at once entering upon his duties soon developed a systematic scheme of investigation.

The Fish Commission now fills a place tenfold more extensive and useful than at first. Its work is naturally divided into three sections:

1. The systematic investigation of the waters of the United States and the biological and physical problems which they present. The scientific studies of the fish are based upon a liberal and phi-

losophical interpretation of the law. In making his original plans the Commissioner insisted that to study only the food-fishes would be of little importance, and that useful conclusions must needs rest upon a broad foundation of investigations purely scientific in character. The life history of species of economic value should be understood from beginning to end, but no less requisite is it to know the histories of the animals and plants upon which they feed or upon which their food is nourished; the histories of their enemies and friends, and the friends and foes of their enemies and friends, as well as the currents, temperatures, and other physical phenomena of the waters in relation to migration, reproduction, and growth. A necessary accompaniment to this division is the amassing of material for research to be stored in the national and other museums for future use.

2. The investigation of the methods of fisheries, past and present, and the statistics of production and commerce of fishery products. Man being one of the chief destroyers of fish, his influence upon their abundance must be studied. Fishery methods and apparatus must be examined and compared with those of other lands, that the use of those which threaten the destruction of useful fishes may be discouraged, and that those which are inefficient may be replaced by others more serviceable. Statistics of industry and trade must be secured for the use of Congress in making treaties or imposing tariffs, to show to producers the best markets, and to consumers where and with what their needs may be supplied.

3. The introduction and multiplication of useful food-fishes throughout the country, especially in waters under the jurisdiction of the general government, or those common to several States, none of which might feel willing to make expenditures for the benefit of the others. This work, which was not contemplated when the Commission was established, was first undertaken at the instance of the American Fish Cultural Association, whose representatives induced Congress to make a special appropriation for the purpose.

## IX.

Comment upon the facts presented in this biographical sketch seems to be unnecessary. Future historians of American science will be better able than are we to estimate justly the value of the contributions to scientific literature which are enumerated in the bibliography; but no one not living in the present can form an accurate idea of the personal influence of a leader upon his associates, and upon the progress of thought in his special department, nor can such an influence as this well be set down in words. This influence is apparently due not only to extraordinary skill in organization, to great power of application and concentration of thought constantly applied, and to a philosophical and comprehensive mind, but to an entire and self-sacrificing devotion to the interests of his own work and that of others.



A LIST OF GENERA AND SPECIES NAMED IN HONOR OF  
PROFESSOR BAIRD.

*Bairdiella*, GILL. Proc. Acad. Nat. Sci. Phila., xiii, 1861, p. 83. (Type, *Bodianus argyroleucus*, Mitchill.)

A genus of the family *Sciænidae* was represented by one species on the east coast of the United States.\*

*Acanthidops Bairdi*, RIDGWAY. Proc. U. S. National Museum, iv, 1882, p. 336.

A bird of the family *Dendrocolaptidae*, inhabiting Costa Rica.

*Actodromus Bairdii*, COUES. Proc. Acad. Nat. Sci. Phila., 1861, p. 494. (*Atodromus*) Sclater, Proc. Zool. Soc. 1867, p. 332.

A bird of the family *Scolopacidae*, inhabiting North America, chiefly in the interior.

*Alepocephalus Bairdii*, GOODE & BEAN. Proc. U. S. National Museum, ii, p. 55, July 1, 1879.

A fish of the family *Alepocephalidae*, inhabiting the deep waters of the northwestern Atlantic.

*Anchitherium Bairdii*, LEIDY. Owen's Rep. Geol. Surv. Wisc., &c., 1852, p. 572. Ext. Vert. Fauna, Wash. Terr., 1873, p. 322, pl. vii, fig. 15.

A fossil mammal of the order *Perissodactyli*, family *Anchitheriidae*, found in the Mauvaises Terres of White River, Dakota, and the tertiary formations on John Day's River, Oregon.

*Archaster Bairdii*, VERRILL. Amer. Journ. Sci., xxiii, p. 139, February, 1882.

A star-fish of the family *Astropectinidae*, inhabiting the deeper waters off the New England coast.

*Buteo Bairdi*, HOY. Proc. Acad. Nat. Sci. Phila., vi, 1853, 451.

A bird of the family *Falconidae*, inhabiting  
= *Buteo Swainsoni*, Bonap.

*Calliostoma Bairdii*, VERRILL & SMITH. Amer. Journ. Sci., xx, p. 396, November, 1880.

A gastropod mollusk of the family *Trochidae*, inhabiting the deep waters off the New England coast.

*Campephilus Bairdi*, CASSIN. Proc. Acad. Nat. Sci. Philadelphia, 1863, p. 322.

A bird of the family *Picidae*, inhabiting

*Certhiola Bairdi*, CABANIS. Journ. Ornitho., 1865, p. 412.

A bird of the family *Sylviolidae*, a member of the West Indian fauna.  
= *Certhiola bahamensis*, Reich.

*Coccygus Bairdi*, SCLATER. Proc. Zool. Soc., March, 1864, p. 120.

A bird of the family *Cuculidae*, described from Jamaica.

*Coluber Bairdi*, YARROW. Bull. U. S. Nat. Museum, No. 17, 1880, p. 41.

A serpent of the family *Colubridae*, inhabiting Texas.

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\* The name BAIRDIA was dedicated to Dr. Baird of the British Museum.

*Cottus Bairdii*, GIEARD. Proc. Amer. Assoc. Adv. Sci. ii, 1850, p. 410. Proc. Acad. Nat. Sci. Phila., iii, 1850, p. 189. Smithsonian Contributions, iii, 1852. Mon. Cott., p. 44, pl. i, figs. 5, 6.

A fish of the family *Cottidæ*, inhabiting the streams of Ohio and Cayuga Lake, N. Y.

*Delphinus Bairdii*, DALL. Proc. Cal. Acad. Sci., v, Jan., 1873. Seamon, Marine Mammals of the Northwest Coast, 1874, p. 283 (and 99), pl. xix, fig. 1.

A cetacean of the family *Delphinidæ*, found in the Pacific waters of the United States.

*Dolium Bairdii*, VERRILL & SMITH. Amer. Journ. Sci., xxii, p. 296, Oct., 1881.

A gastropod mollusk of the family *Buccinidæ*, inhabiting the deep waters off the New England coast.

*Elasmognathus Bairdii*, GILL. Proc. Acad. Nat. Sci. Phila., 1865, p. 183.

A mammal of the family *Tapiridæ*, inhabiting Central America.

*Emberiza Bairdii*, AUDUBON. Birds of North Am., vii, 1843, p. 359, pl. 500.

Baird, Brewer & Ridgway. Birds of North America, i, 1874, p. 531, pl. xxv, fig. 3.

A bird of the family *Fringillidæ*, inhabiting the central plains of North America. = *Centronyx Bairdii*, (Audubon).

*Empidonax Bairdii*, SCLATER. Proc. Zool. Soc. Lond., 1858, p. 301.

A bird of the family *Tyrannidæ*, inhabiting the mountains of Central America.

*Graculus Bairdi*, "GRUBER, MSS.", COOPER. Proc. Phil. Acad. 1865, p. 5.

A bird of the family *Graculidæ*, inhabiting the Farallone Islands, California.

= *Phalacrocorax Bairdi*, (Gruber).

*Junco Bairdi*, BELDING, MSS. Proc. U. S. Nat. Mus., 1883.

A bird of the family *Fringillidæ*, inhabiting Lower California

*Lepus Bairdi*, HAYDEN. Amer. Nat., iii, 1869, 115. Bull. Essex Inst., vi, 1874, pp. 61-66.

A mammal of the family *Leporidæ*, inhabiting the Rocky Mountains.

= *Lepus americanus*, var. *Bairdi*, ALLEN.

*Macrurus Bairdii*, GOODE & BEAN. Amer. Journ. Sci. and Arts, xiv, p. 471, Dec., 1877.

A fish of the family *Macruridæ*, inhabiting the deep waters of the north-western Atlantic.

*Melanerpes formicivorus Bairdi*, RIDGW. Bull. U. S. Nat. Mus., No. 21, 1881, 34.

A bird of the family *Picidæ*, inhabiting California.

*Mus Bairdii*, HOY & KENNICOTT. Agricultural Report, U. S. Patent Office for 1856 (1857), p. 92, pl. xi.

A mammal of the family *Muridæ*, inhabiting the Mississippi valley.

= *Hesperomys michiganensis*, Wagner (A. & B.).

*Octopus Bairdii*, VERRILL. Amer. Journ. Sci. and Arts, 1873, p. 5.

A cephalopod mollusk of the family *Octopodidae*, inhabiting the deep waters off the New England coast.

*Palæotherium Bairdii*, LEIDY. Proc. Acad. Nat. Sci. Phila., v, p. 122, and 6th Ann. Rep. Smithsonian Institution, 1852, p. 64.

A fossil mammal of the family *Palæotheriidae*, found in the territory of the Mauvaises Terres of Dakota.

*Papilio Bairdii*, EDWARDS. Proc. Ent. Soc. Phila., 1866.

A butterfly of the family *Papilionidae*, inhabiting Arizona and New Mexico.

*Picus Bairdi*, SCLATER (MS). Malherbe, Mon. Pic., 1, p. 188, vol. xxvii, figs. 7, 8.—*Picus scalaris*, Wagler.

A bird of the family *Picidae*.

*Pomacentrus Bairdii*, GILL. Proc. Acad. Nat. Sci. Phila., 1862, 148.

A fish of the family *Pomacentridae*, inhabiting the waters of Lower California.

*Pyrula Bairdi*, MEEK & HAYDEN. Proc. Acad. Nat. Sci. Phila., vii, 1856, p. 66, fig. —, in Meek's Invertebrate Paleontology, U. S. Geol. Surv. of the Territories, ix, pl. xxxi, fig. 10 a. b.

A fossil mollusk of the family *Pyrulidae* from the Fox Hills group of the Upper Missouri cretaceous series.

=*Pyropsis Bairdi*, (M. & H.) MEEK.

*Salmo Bairdii*, SUCKLEY. Am. Lyc. Nat. Hist. N. Y., vii, 1869, p. 309 (*Salmo*).

A fish of the family *Salmonidae*, inhabiting the streams of the Pacific coast of North America.

*Saurophagus Bairdii*, GAMBEL, Journ. Phila. Acad., i, second ser., 1847, p. 40.

*Syngnathus Bairdianus*, DUMERIL. Hist. Nat. Poiss., ii, 1870, p. 574.

A fish of the family *Syngnathidae*, inhabiting the Pacific coast of Mexico.

# BIBLIOGRAPHY OF THE PUBLICATIONS

## OF

# PROFESSOR SPENCER FULLERTON BAIRD, LL. D.

### I. CHRONOLOGICAL CATALOGUE.

#### 1.

43. BAIRD, SPENCER F., and WILLIAM M. BAIRD.\* Descriptions of two Species, supposed to be new, of the Genus *Tyrannula* Swainson, found in Cumberland County, Pennsylvania. By William M. & Spencer F. Baird, of Carlisle, Pa. < *Proc. Acad. Nat. Sci. Phila.*, i, pp. 283-285, 1843. Presented for publication July 11; ordered printed July 25.
- |   |     |
|---|-----|
| <i>Tyrannula flaviventris</i> , Baird, n. s. .... | 283 |
| Carlisle, Pa., 1840.                              |     |
| <i>Tyrannula minima</i> , Baird, n. s. ....       | 284 |
| Near Carlisle, Pa. May, 1839.                     |     |

#### 2.

44. BAIRD, SPENCER F., and WILLIAM M. BAIRD. List of Birds found in the vicinity of Carlisle, Cumberland County, Penn., about Lat. 40° 12' W., Lon. 77° 11' W. By William M. & Spencer F. Baird. < *Amer. Journ. Sci. and Arts*, xlv, 1844, No. 2, Jan.-Mar., art. vi, pp. 261-273.
- 201 species are enumerated, the times of appearance and relative abundance of each being mentioned. Breeders marked. The following summation is made:—
- |                                     |      |
|-------------------------------------|------|
| "Species spending the summer .....  | 112  |
| Species resident all the year ..... | 38   |
| Winter visitors .....               | 14." |
- 4 other species are indicated, as well as a number supposed to have been observed by B. S. Barton and others.

#### 3.

44. BAIRD, SPENCER F., and WILLIAM M. BAIRD. Descriptions of two species, supposed to be new, of the genus *Tyrannula* (Swainson), found in Cumberland Co., Penn. By Wm. M. & Spencer F. Baird, of Carlisle, Pa. < *Amer. Journ. Sci. and Arts*, xlv, 1846, No. 2, Jan.-Mar., pp. 273-276.
- Same as No. 1.
- |                                     |     |
|-------------------------------------|-----|
| <i>Tyrannula flaviventris</i> ..... | 274 |
| <i>Tyrannula minima</i> .....       | 275 |

#### 4.

44. BAIRD, SPENCER F. On the application of bi-chromate of potassa to photographic purposes. < *Literary Record and Journal of the Linnæan Association of Pennsylvania College*, i, No. 2, Dec., 1844,, pp. 17-19.
- "By Spencer F. Baird of Carlisle, Pa." Describes the process of copying other flat objects on paper sensitized by bi-chromate of potassa.

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\* WILLIAM M. BAIRD, brother of Prof. S. F. Baird, born in Reading, Pa., Aug. 4, 1817, died in Reading Oct. 19, 1872. Entered Lafayette College 1834. Graduated at Dickinson College 1837. Admitted to Berks County bar, Reading, April 12, 1844. Mayor of Reading 1855-56. Collector of Internal Revenue, 8th District of Pennsylvania, 1869-1872.

## 1844. BAIRD, SPENCER F.—Continued.

"To the purpose of copying a coarse print, a piece of music, an embroidering pattern or a leaf this process is admirably adapted. It is for the latter object that the art has been mostly used by the writer, who last summer copied leaves of nearly all the trees and shrubs of Cumberland County (Pennsylvania), amounting to nearly two hundred species. These photographs are as valuable for scientific purposes as good engravings of the same would be, perhaps more so, as not only is the outline perfectly given, but in most cases the fine and delicate venation, whose arrangement frequently forms a specific character, is distinctly preserved."

This collection of leaf photographs, still preserved in the National Museum, has been one of the standard resources of American palaeophytologists, and has been used in the preparation of many of the works on the Fossil Botany of the United States.

## 5.

1845. BAIRD, SPENCER F. Contributions towards a catalogue of the trees and shrubs of Cumberland County, Pa. < *Lit. Rec. and Journ. Linnæan Assoc. Pennsylvania College*, i, No. 4, Feb., 1845, pp. 57-63.

After introductory remarks on the geology and topography of Cumberland County and the relations of peculiarities of vegetation to the soil, a list of the trees and shrubs is given, with common names, stations, and notes regarding abundance. The whole number of species enumerated is 150, 20 of which had been found in Chester County.

The collection of woods, cut and polished, prepared in connection with this paper is preserved in the National Museum.

## 6.

1845. BAIRD, SPENCER F. Catalogue of birds found in the neighborhood of Carlisle, Cumberland Co., Pa. < *Lit. Rec. and Journ. Linnæan Assoc. Pennsylvania College*, i, No. 12, Oct., 1845, pp. 249-257.

A revision of No. 2.

A list of the species of birds collected by the writer between 1840 and 1845 (with a very few exceptions) within a few miles of Carlisle. "None are admitted without having been actually killed and preserved; in no case have any been admitted on the authority of others. A residence nearer the Susquehanna would no doubt have enabled us to increase this number considerably, as we have heard of several not in this list which have been killed about Harrisburg. Some of these will be found in a catalogue of additional species procured at Marietta, Pa. (25 miles south of Cumberland Co., by Mr. J. Libhart), most if not all of which touch on our eastern border. The nomenclature employed is based on that of Prince Bonaparte, . . . with the additions, however, of the authority for each species, and various alterations called for by a strict regard to the law of priority. The name immediately succeeding each species is that of its first describer, and if in parenthesis, under a different genus. The second name is his who first placed that particular specific appellation under its present genus. A (!) prefixed shows that this bird breeds here."

The list of species is supplemented by references to Audubon's names, by the common names, and notes on relative abundance and season of appearance. The paper is summed up as follows (p. 257):

"Total of species in Cumberland Co .....	202
of which:—Breeding .....	104
Summer visitors .....	66
Resident .....	38
Transitory in spring .....	90
Seen in autumn only .....	8."

The Marietta list includes 9 species, and 6 others are mentioned "of whose existence in our vicinity we have had strong proof (but) are not included for want of specimens." None of these are included in the summation.

The following combinations appear in this paper for the first time:—

<i>Myiodiodes pusillus</i> (Wils.) Baird. R.....	255
<i>Carpodacus purpureus</i> (Gm.) Baird. R.....	255
<i>Pluvialis virginianus</i> (Bork.) Baird. R.....	
<i>Nycticorax discors</i> (Nutt.) Baird. R.....	245
<i>Porzana carolina</i> (Linn.) Baird. R.....	
<i>Porzana noveboracensis</i> (Gm.) Baird. R.....	
<i>Porzana jamaicensis</i> (Bris.) Baird. R.....	

## 7.

1846. B[AIRD], S[PENCER] F. The sea-serpent in Norway. < *Lit. Rec. and Journ. Linnean Assoc. Pennsylvania College*, ii, No. 5, Mar., 1846, pp. 106-107.  
Notice of information obtained by Dr. H. Boie, while on a tour through Norway in 1817.

## 8.

1846. BAIRD, SPENCER F. Hints | for Preserving | Objects of Natural History | prepared | by Prof. S. F. Baird, | for | Dickinson College, | Carlisle, Pa. | Carlisle: | Printed by Gitt & Hinckley, | 1846. 8vo. pp. 12.  
Reptiles and Fish, pp. 7, 8.  
A supplementary schedule without title-page was published in 1848.

## 9.

1847. BAIRD, SPENCER F. Dr. Leidy read a letter from Prof. Spencer F. Baird, of Carlisle, Pa., describing a Hybrid between the Canvass back Duck and the Common Duck. < *Proc. Acad. Nat. Sci. Phila.*, iii, 1846 and 1847, p. 209 (May 4, 1847).  
Nothing additional to the above ever published.

## 10.

1849. BAIRD, SPENCER F. Revision of the North American Tailed-Batrachia, with descriptions of new genera and Species. < *Journ. Acad. Nat. Sci. Phila.*, 2d ser., i, pp. 281-294, Oct., 1849.

Issued also as excerpt, without title or repagination.

"The following notes, introductory to a more detailed memoir on the same subject, will, it is hoped, throw some light upon this obscure portion of American zoology. To this we would refer for the descriptions of species, with their anatomical and physiological characters, giving only in this place brief outlines of the genera and the synonymy of the species."

The various genera are defined, and a synonymic list of species is given, with notes upon habitats.

*Desmognathus* (Baird), n. g. (on *S. niger* and *S. fuscus*, auct.)..... 282

The following new combinations are made:—

*Ambystoma punctata* (Linn.) Baird. R..... 283

*Ambystoma opaca* (Gravenhast) Baird. R.

*Ambystoma jeffersoniana* (Green) Baird. R.

*Ambystoma macrodactyla*, Baird, n. s. (name given only, species described below).

*Ambystoma tigrina* (Green) Baird. R..... 284

*Ambystoma lurida* (Sager) Baird. R.

*Ambystoma mavortia*, Baird, n. s. (name only, described below).

*Ambystoma episcopus*, Baird, n. s. (name only, described below).

*Notophthalmus viridescens* (Rafin) Baird. R.

*Notophthalmus torosus* (Eschscholtz) Baird. R.

*Plethodus erythronota* (Green) Baird. R..... 285

*Desmognathus niger* (Green) Baird. R.

*Desmognathus fuscus* (Rafin.) Baird. R.

*Desmognathus auriculatus* (Holbrook) Baird. R.

*Pseudotriton montanus*, Baird, n. s. (name only, described below)..... 287

*Pseudotriton salmoneus* (Stover) Baird. R.

*Spelerpes longicauda* (Green) Baird. R.

*Spelerpes guttolineata* (Holbrook) Baird. R.

*Spelerpes bilineata* (Green) Baird. R.

*Spelerpes cirrigera* (Green) Baird. R.

*Batrachoseps quadridigitata* (Holbrook) Baird. R.

*Necturus lateralis* (Say) Baird. R..... 290

*Necturus maculatus* (Barnes) Baird. R.

*Siredon maculatus* (Owen) Baird. R..... 292

## 11.

1849. BAIRD, SPENCER F. Descriptions of four new species of North American Salamanders, and one new species of Scink. < *Journ. Acad. Nat. Sci. Phila.*, 2d ser., i, Oct., 1849, pp. 292-294.

*Ambystoma macrodactyla*, Baird, n. s. .... 292

Astoria, Oreg. J K Townsend, M. D.

## 1849. BAIRD, SPENCER F.—Continued.

<i>Ambystoma macrodon</i> , Baird, n. s.	
New Mexico. Dr. Winkelman.	
<i>Ambystoma episcopus</i> , Baird, n. s.	288
Kemper County, Miss. Clinton Lloyd.	
<i>Pseudotriton montanus</i> , Baird, n. s.	
South Mountain, near Carlisle, Pa. S. F. Baird.	
<i>Plestiodon anthracinus</i> , Baird, n. s.	294
South Mountain, near Carlisle, Pa. S. F. Baird.	

## 12.

1850. BAIRD, SPENCER F. Descriptions of four new species of North American Salamanders, and one new species of Scink. < *Amer. Journ. Sci. and Arts*, ix, 2d ser., Jan., 1850, pp. 137-139.

The memoir in the Journal of the Academy of Natural Sciences, (2) 1, pp. 292-294, is given in full, prefixed by a commendatory notice by the editor of the Journal, of this paper and the one on the Tailed Batrachians.

## 13.

1850. BAIRD, SPENCER F. On the Bone Caves of Pennsylvania. < *Proc. Amer. Assoc. Adv. Sci.*, ii, 1850, pp. 352-355. (Cambridge Meeting, Aug., 1849.) Read Aug. 20, 1849.

Explorations of a cave near Carlisle, Pa., and two others in Pennsylvania.

## 14.

1850. BAIRD, SPENCER F. On the Urodelian Batrachians. < *Proc. Amer. Assoc. Adv. Sci.*, ii, 1850, p. 402.

A verbal abstract of this paper was presented to the Association and only the title was published.

## 14a.

## 1850. [BAIRD, SPENCER F.] Registry of Periodical Phenomena.

(Printed on a half-sheet of thin, blue letter-paper.) Published by the Smithsonian Institution.

"The Smithsonian Institution, being desirous of obtaining information with regard to the periodical phenomena of animal and vegetable life in North America, respectfully invites all persons who may have it in their power to record their observations and to transmit them to the Institution. The points to which particular attention should be directed are the first appearance of leaves and of flowers in plants; the dates of appearance and disappearance of migratory or hibernating animals—Mammalia, Birds, Reptiles, Fishes, Insects, &c.; the time of nesting of Birds; of moulting of and littering of Mammalia; of utterance of characteristic cries among Reptiles and Insects, and anything else which may be deemed noteworthy.

"A list of plants is appended to which particular reference should be had in making observations. It has been prepared from materials furnished by Dr. John Torrey and others, and will be found to contain many species distributed throughout the United States, together with an indigenous number to, or cultivated in Europe. For the present, attention may be paid alone to the time of flowering of these species, this period in all cases being indicated by the first appearance of the anther in the expanding flower.

"The Smithsonian Institution is also desirous of obtaining detailed list of all the animals and plants of any locality throughout this continent. These, when practicable, should consist of the scientific names as well as those in common use; but when the former are unknown, the latter alone may be employed. It is in contemplation to use the information thus gathered in construction of a series of species, showing the geographical distribution of the animal and vegetable kingdoms of North America."

## 15.

## 1850. BAIRD, SPENCER F. General Directions for Collecting and Preserving Objects of Natural History.

Published by the Smithsonian Institution. Printed on a half-sheet of blue letter-paper. On the back a list of "special desiderata."

A letter from the Quartermaster-General, dated March 31, 1848, granting facilities for transportation in accordance with request of Baird.

## 16.

1851. BAIRD, SPENCER F. Report of the Assistant Secretary in charge of the natural history department [of the Smithsonian Institution] for the year 1850. *<Fifth Annual Report of the Secretary of the Smithsonian Institution for the years 1850, 1851, pp. 41-50.*

Contains a list of the principal accessions to the Museum of the Smithsonian Institution made prior to January 1, 1851, p. 41, and summary of Specimens belonging to S. F. Baird and deposited by him in the cabinet of the Smithsonian Institution.\*

To JOSEPH HENRY, LL. D.,

*Secretary of the Smithsonian Institution:*

SIR: I beg leave to present to you a report of operations up to January 1, 1851, in the Department of Natural History, assigned to my charge.

I commence with a list of the most important specimens of natural history received at the Smithsonian Institution prior to January 1, 1851. The dates of reception have not been given, owing to the fact that most had arrived before July 1, 1850, the period when my official connection with the Institution commenced. More detailed accounts of these objects will hereafter be furnished, as well as of those which may in future be received.

LIST OF THE PRINCIPAL ACCESSIONS TO THE MUSEUM OF THE SMITHSONIAN INSTITUTION MADE PRIOR TO JANUARY 1, 1851.

Lieutenant Lynch, U. S. N. Sealed bottles containing water from the Dead Sea; cones of the cedar of Lebanon.

Miss D. L. Dix. Box of minerals from North Carolina.

Dr. F. B. Hough. Box of minerals and fossils from St. Lawrence County, New York.

Mr. Guest. Box of minerals from same locality.

Mr. Polkinhorn. Box of Tertiary fossils from North Carolina.

Dr. James Eighte, Albany, N. Y. Box of sands, clays, and concretions from the vicinity of the city of Albany, N. Y.

Dr. William B. Smith, Indiana. Silurian fossils from Indiana.

William Phillips, Esq., Augusta, Ga. Box of minerals from Georgia.

Oscar Freeman and Gilbert Taylor, civil engineers. Very large specimens of crystallized calcareous spar coated with quartz, found in tunnelling St. Anthony's Nose, Peekskill, N. Y.

Faxon D. Atherton, Esq. Specimens of native silver from Chili.

Maj. B. Alvord, Fort Gratiot, Mich. Keg containing fishes from Lake Huron, caught in the vicinity of Fort Gratiot.

Col. J. J. Abert. Box of minerals from Arkansas.

E. J. Pollard, Washington City. Skeleton of gazelle (*Antilope saiga* Pall.) from Turkey.

Thomas Whelpley, Brest, Mich. Cask of Unionids and other shells from Lake Erie.

John G. Pendergaat, Sackett's Harbor. Box of minerals

Dr. Jared P. Kirtland, Cleveland, Ohio. Jar of rare salamanders.

Maj. J. H. Carleton, Fort Leavenworth. Skull of bighorn (*Ovis montana*); horns of bighorn; antlers of black-tailed deer (*Cervus macrotis*); skull of Antelope (*Antilope americana*), from Black Hills, Fort Laramie.

W. Hidgeon, Iowa. Crania and other relics from various aboriginal mounds; paintings in oil on cloth, of various mounds in the Northwest, by a native Sioux Indian.

Robert Howell, Nichols, Tioga County, N. Y. Box of minerals and fossils from Tioga County, N. Y.

THE FOLLOWING SPECIMENS HAVE BEEN RECEIVED FROM COLLECTORS WHO WERE ASSISTED IN THEIR EXPLORATIONS BY THE SMITHSONIAN INSTITUTION:

Augustus Fendler. Collections of plants made in the vicinity of Santa Fé, N. Mex., in 1846 and 1847.

Charles Wright. Plants collected in an expedition from Texas to El Paso in 1849.

Thaddeus Culbertson. Skins, skulls, and skeletons of mammalia from the Upper Missouri fossil vertebrate animals from White River.

Many specimens brought back by Mr. Culbertson were presented to the Institution through him by members of the American Fur Company. Among them may be mentioned Messrs.

Alexander Culbertson, Ferdinand Culbertson, Edward T. Denig, Schlegel and Gilbert.

Messrs. Denig and F. Culbertson, at the request of Mr. Alexander Culbertson, prepared skins of the grizzly bear and other large mammalia.

\* This list and summary, not having been included with the Secretary's report in the volume printed in 1857, is here reproduced, being of much interest as a record of the specimens which formed the nucleus of the National Museum.



1851. BAIRD, SPENCER F.—Continued.

THE FOLLOWING SPECIMENS HAVE BEEN DEPOSITED IN CONFORMITY WITH THE PROVISIONS OF THE ACT ESTABLISHING THE SMITHSONIAN INSTITUTION:

General Land Office. Minerals illustrating the geological survey of the mineral region of Lake Superior, by Dr. Charles T. Jackson, contained in nineteen boxes.

Possessing myself large collections in different branches of zoology, I have deposited them with the Institution. The following list contains a brief enumeration of the most important of these. It will thus be evident to the naturalist that the objects already secured by the Smithsonian Institution, if not as numerous as in other collections, are yet valuable as being more than usually complete in certain neglected branches of natural history.

SUMMARY OF SPECIMENS BELONGING TO S. F. BAIRD, AND DEPOSITED BY HIM IN THE CABINET OF THE SMITHSONIAN INSTITUTION.

MAMMALIA.

Skins of the principal mammalia of the Northern and Middle States and of Eastern Europe, with numerous specimens of the smaller species preserved in alcohol.

BIRDS.

A collection of about five hundred species of North American birds in skins, consisting of about twenty-five hundred specimens in the various stages of age, sex, and season.

About two hundred and fifty species of European birds in one thousand specimens.

Eggs of about one hundred and fifty species of North American birds. Duplicates of many of them, in some cases amounting to over a hundred of a single species. The nests accompany the eggs of many of these species.

Nests and eggs of about seventy-five species of European birds, likewise in duplicate.

REPTILES AND FISHES.

A collection of the reptiles and fishes of the United States, at present contained in more than five hundred glass jars, and in numerous barrels, kegs, and tin vessels. Most of these species are represented by numerous specimens, amounting in certain cases to hundreds and even thousands of a single species. No approximation can, at present, be formed as to the number, either of the specimens or of the species. Very many, especially of the fishes, are still undescribed. Most of them have been personally collected in special expeditions to various parts of the country, such as Eastern and Western Pennsylvania, the great lakes, Northern and Eastern Ohio, Southern and Western Virginia, &c.; others have been furnished by contributors in Georgia, Florida, Mississippi, Arkansas, and other States. This collection is especially rich in batrachian reptiles, which are preserved in large numbers in all their peculiar conditions of transformation. There is, in addition to these, a good collection of the fresh-water fishes and reptiles of Central and Eastern Europe.

EMBRYOLOGY.

Embryos of many birds, mammals, and batrachian reptiles.

OSTEOLOGY.

Skulls and skeletons of many North American vertebrata, amounting to some six hundred specimens. A considerable number also belonging to European species.

Also, microscopical sections of teeth and bone of various species of North American vertebrata.

FOSSIL REMAINS.

A large collection of fossil bones from various caves in Pennsylvania and Virginia. This includes nearly all the species of mammalia now living in the United States, with quite a number of those which are now entirely extinct. Chelonian remains likewise in large number.

Some general suggestions in regard to future operations of the Smithsonian Institution in the Department of Natural History, as follows:

"I beg leave, in conclusion, to present some general suggestions in regard to future operations of the Smithsonian Institution, in the Department of Natural History. It is a fundamental principle in its organization, as presented in the programme and your annual reports, not to

## 1851. BAIRD, SPENCER F.—Continued.

attempt complete collections of all natural objects, but rather to gather up such materials for investigation as have been comparatively neglected by others. It may, indeed, be desirable, for purposes of general examination, to have extensive series of specimens from the three kingdoms of nature—animal, vegetable, and mineral—so far as they can be procured and exhibited without undue expense of time, money, and space. For the present, however, attention should be directed mainly to such branches as hitherto may not have had their due share of attention.

"A prominent object in making collections should be to furnish to travelers the means of determining the character of objects collected in various parts of North America.

"Hitherto, officers of the Army returning to Washington have generally been obliged to send or carry these objects out of the city for the purpose of identification or verification, thus involving a considerable loss of time and credit. These specimens becoming widely scattered rarely return hither, and, when another occasion arises, the whole labor has to be repeated. By retaining them here and combining with them such series of specimens from North America, and other parts of the world, as may be specially procured for the purpose, very little delay in making up reports need hereafter arise. It will, of course, be necessary to call in the aid of the library in procuring all the general and special works which may be required in these investigations. Towards such help the rich collection of transactions of learned societies, already in the library of the Institution, and augmenting daily, will greatly tend.

"Collections illustrating the general natural history of North America become, then, an object of primary importance. Much valuable material of this kind is now on hand and much, it is hoped, will be procured in the various ways hereafter specified. An exceedingly important aid to this is furnished by the act of Congress establishing the Smithsonian Institution, which specifies that all objects of natural history belonging, or hereafter to belong, to the United States, in whosever's custody the same may be, shall be delivered to such persons as are authorized by the Board of Regents to receive them. This entrusts to the Institution the custody of all collections publicly and officially made; but there are many valuable specimens procured in a private way whose acquisition must depend on the co-operation and assistance of officers of the various expeditions and of heads of departments. Officers stationed at the various military posts have it in their power to do much by procuring the objects of natural history in their vicinity and forwarding them to Washington. It is earnestly hoped that this co-operation may be obtained generally.

"Next in importance to North American objects of nature are those of Europe. The ties uniting the two continents are not merely those of moral, civil, and political relationship, for the connection existing between the natural history of the two is almost as intimate. A large proportion of the genera found in the one occur in the other—often the same species—or those that are very closely allied. This is true of all orders of animals and of most families of plants.

"Next to Europe comes Japan, a region which, in some respects, is more closely allied to our country than even Europe. This is especially the case with respect to reptiles, some of which, as species of *Plestiodon* and others, have been considered by eminent herpetologists absolutely identical with North American. Unfortunately there are at the present time almost insuperable difficulties in the way of procuring Japanese specimens; the Dutch naturalists being the only ones who have succeeded in exploring even the shores of this country. Little can be done, therefore, except by exchange with the museums of Holland.

"With regard to collections from other countries than those specified, the best rule will be to seek for those series which the other museums of the country do not possess. What these are I do not, at present, feel prepared to state; but hope to have it in my power in a future report to illustrate more fully this subject in a general account of the different collections in North America.

"It may, perhaps, be well to indicate briefly the branches of North American natural history which have received most attention. Mammalia have been ably investigated by Goldman, Harlan, Audubon, Bachman, and others; the present state of our knowledge of the subject being exhibited in the works of the two last-named gentlemen. There is, however, no good collection of these animals; that of the Academy of Natural Sciences of Philadelphia being much the best in the country. The private collection of Mr. Audubon is more complete than any other. It is a mortifying fact that this gentleman was obliged to have recourse to foreign museums for the purpose of figuring and describing certain North American species which should have been accessible in one collection, at least, in this country.

"The ornithological collections of the country, both public and private, are very numerous. Among the former that of the Academy of Natural Sciences is by far the best. The New York Lyceum and the Boston Natural History Society have pretty good collections. Of private collections, among the best are those of Messrs. Bell, Giraud, and Lawrence, of New York. The ornithology of North America, east of the Mississippi, has been pretty well worked up, but much remains to be done west of this boundary.

## 1851. BAIRD, SPENCER F.—Continued.

"General collections of North American reptiles are very rare in this country; that of the Philadelphia Academy, as usual, being the best among public museums.

"Fishes have been preserved in several museums throughout the country. The Boston Natural History Society has the best series of North American marine species. The New York Lyceum comes next. Neither possesses many fresh-water species, being vastly exceeded in this respect by the collections of Professor Agassiz and my own. There is more difficulty in preserving alcoholic specimens, as collections of reptiles and fishes must for the most part necessarily be, than those that are dried; it is to this fact that the scanty representation of these classes of vertebrata is owing.

"Among insects, Coleoptera have been almost exclusively studied. The private collections of Messrs. Leconte, Haldeman, Morris, Harris, Melsheimer, and many others are rich in species. The Messrs. Leconte, father and son, have the largest of these, embracing many hundreds and indeed thousands of undescribed species. The public collection of the Academy of Natural Sciences at Philadelphia and others are of less value. Lepidoptera, or butterflies and moths, come next. The best collection, perhaps, of these is that of Mr. Titian Peale, of Washington. Messrs. Harris, Morris, and Haldeman, and the Academy of Natural Sciences of Philadelphia, have also good collections.

"Comparatively little is known of the other orders of insects. The Neuroptera and Orthoptera of New England have been collected by Dr. Harris; Diptera, Hemiptera, and Hymenoptera have been almost entirely neglected. Say is almost the only American naturalist who has occupied the whole field of entomology.

"Spiders have been ably investigated and abundantly collected by Hentz, who is still continuing his labors in this department. Much, however, remains to be done.

"The Podophthalmian Crustacea are preserved in various cabinets, although many species yet await discovery. Messrs. Say, Dana, and Gibbs are the principal workers in this field. The remaining orders, as Amphipoda, Entomostraca, Isopoda, &c., &c., have been almost wholly neglected.

"The North American worms have never been collected to any extent.

"Of all invertebrata the hard parts of mollusca or shells have received most attention in this country. There are numerous valuable cabinets, public and private, including both domestic and foreign species. The best public collection of American species is probably that of the Academy of Natural Sciences. Among private ones, may be named those of Dr. John C. Jay, John S. Phillips, Isaac Lea, Major John Leconte, J. G. Anthony, Professor Haldeman, and others. Most of these gentlemen have had especial reference to Unionidae in their collections. Nothing, however, has been done towards preserving a series of the animals of shells.

"Very little is known of the Radiata of North America. A few species are preserved in public museums, but by far the most extensive collection is that belonging to Professor Agassiz.

"Phanerogamic plants have received much attention, and the private collections of Doctors Torrey, Gray, and others, with numerous public ones of greater or less extent, leave comparatively little to be desired in this respect. Great additions are continually being received from the country west of the Mississippi, in collections made by officers of the Army and private individuals. Among these should be mentioned Colonel Fremont, Colonel Emory, Captain Stansbury, Major Rich, Messrs. Lindheimer, Wright, Fendler, Gregg, Wislizenus, Drummond, and others.

"Cryptogamic botany has been considerably neglected, until within a few years past. The best collections are in the hands of private individuals, as Messrs. Sullivan, Tuckerman, Curtis, Bailey, Lesquereux, and others. A great deal remains still to be done in this branch of botany. The work of Doctor Harvey on North American Algae, in preparation for the Smithsonian Institution, will tend greatly to stimulate collectors to pay attention to this order.

"Collections in paleontology are quite numerous, though principally local. The best general collection is that of the Academy of Natural Sciences. Their museum is incomparably richer, than any other in this country, in collection of fossil vertebrata. The only collection of any extent, of the fossil bones found in the caves of the United States, is in the cabinet of this Institution. Of the interesting Eocene species of the Upper Missouri, Doctor Evans, of Washington, has made an exceedingly valuable collection under direction of the Land Office. Next to this comes a similar one made by Mr. Culbertson for the Smithsonian Institution. An excellent collection of Tertiary fossils is in possession of Prof. F. S. Holmes, of Charleston, S. C. The Tertiary and Cretaceous fossil shells in the Philadelphia Academy are very numerous in species.

"Many of the mineralogical collections of this country are very complete, both as respects domestic and foreign species. Such are the cabinets of Yale College, of the Academy of Natural Sciences, of Dartmouth College, of Bowdoin College, of Messrs. Markoe, Vaux, Clay, Ashmead, Alger, Bouve, and others. The general interest in the subject of mineralogy is such as scarcely to require any additional stimulus, except so far as relates to geology.

## 1861. BAIRD, SPENCER F.—Continued.

"There are various ways in which collections may be made by the Smithsonian Institution the principal of which are as follows:

"Deposits by government,  
 " by individuals,  
 Exchange,  
 Purchase,  
 Employment of collectors,  
 Donations.

"To the first of these, I have already briefly referred. Up to the present time nothing has been received, save the series of specimens illustrating Dr. Jackson's report on the mineral lands of Lake Superior.

"In some collections, specimens deposited by individuals form a conspicuous feature. These, when of considerable extent and completeness, or when illustrating some special researches or publications, are often very important, particularly as they are, in most cases, ultimately presented. Single specimens, unless of much value, are not generally desirable as deposits. Free choice must, of course, be left the Institution, to say what shall be received and what rejected.

"To the individual collector, exchange with other individuals or with societies forms the principal mode of forming his cabinet, beyond what may be personally procurable. This of course implies that the specimens be gathered in larger quantities than would be necessary for a single collection. By a judicious system of exchange, based upon a large stock of duplicates, it seems possible to procure almost any species, domestic or foreign, at little expense beyond that of transportation. To this end it is desirable to secure large numbers of such objects as may be specified hereafter.

"Purchase is an excellent method of increasing a collection in a short time. It not unfrequently happens, however, that acquisitions thus made are of comparatively little value, as is found to be the case in regard to most of the miscellaneous museums, public and private, which are offered for sale. It is of course different with respect to collections made for a specific purpose by practised naturalists, particularly when they contain undescribed species or serve as the types of standard works. Considerable operations of this kind require large sums of money, as will be seen by reference to the annual statement of expenditures made by the British Government in behalf of the National Museum;\* and, with numerous

\* *Expenditures by the British Government for the specimens of natural history in the British Museum.*

## FROM 1753 TO 1846, INCLUSIVE.

Natural history in general .....	£10,405	3	8		
Minerals and fossils .....	17,238	12	1		
Zoological specimens .....	12,751	4	11		
Botanical .....	1,204	11	7		
				£41,599	12 3
1847.					
Minerals and fossils .....	672	2	9		
Zoological specimens .....	1,295	17	8		
Botanical specimens .....	31	15	0		
Preparation of specimens .....	1,317	7	5		
				3,297	2 10
1848.					
Minerals and fossils .....	1,111	16	9		
Zoological specimens .....	1,085	5	10		
Botanical specimens .....	40	1	3		
Preparation of specimens .....	1,259	11	6		
				3,496	15 4
1849.					
Minerals and fossils .....	701	12	0		
Zoological specimens .....	1,080	6	1		
Botanical specimens .....	40	8	3		
Preparation of specimens .....	945	14	7		
				2,766	00 11
Total .....				51,161	11 2
TOTAL EXPENDITURES OF ALL KINDS, NATURAL HISTORY, SPECIMENS, BOOKS, FINE ARTS, &c.					
From 1753 to 1846, inclusive .....	£2816,063	11	00		
1847 .....	49,854	7	10		
1848 .....	49,845	2	11		
1849 .....	47,791	3	4		
	963,555	5	1		

## 1851. BAIRD, SPENCER F.—Continued.

drafts on its income, it is not deemed expedient for the Smithsonian Institution ever to do much more for its cabinet by direct purchase. It is confidently believed, too, that the museum will increase almost as rapidly as accommodations can be furnished, by donations of individuals who may have it in their power to make collections, as well as by the special efforts of its officers. This hope is strengthened by the actual experience of other institutions.

"The employment or assistance of collectors in visiting particular portions of country is productive of very important results at very little expense. In illustration of this, I would refer to the acquisitions made by the Institution through Messrs. Lendler, Lindheimer, Wright, Culbertson, and others. In this I am also borne out by my own experience. For several years past I have been in the habit of visiting different portions of the United States, mainly in search of vertebrate animals. Accompanied on such occasions by zealous volunteers, I have succeeded in accumulating very extensive collections, including very many rare and even undescribed species, besides obtaining much valuable information in regard to the general history of animals and plants.

"It is mainly to the employment of collectors that the great European museums owe their richness. In most of these a regular corps is employed continually in traveling through various portions of the world and gathering large numbers of duplicates, which are ultimately distributed in exchange to other institutions.

"In cases where memoirs containing descriptions of animals or plants are presented to the Institution for publication, it should, as far as possible, be made a condition of their acceptance that a series of the objects described be deposited for the purpose of being placed on record and as authenticating the species. These should be labeled by the author, and the names thus attached be ever afterwards retained, even though they may have been incorrect or may have been modified by subsequent discoveries. Individuals, too, should be requested to present similar specimens, to be kept in the same manner, illustrating descriptions published elsewhere than by the Smithsonian Institution.

"At some future period, when the number of duplicates is sufficiently large, it may be possible to furnish lyceums, schools, and other institutions with series of specimens, properly labeled and arranged, of various branches of natural history. Individuals, too, engaged in special investigations may hereafter find it practicable to procure objects in such quantities or of such character as to render material if not indispensable aid. This feature will, however, require the cordial co-operation of naturalists and collectors to render it practicable.

"I may remark that, for the assistance of those who may be unskilled in the collecting, preservation, and packing of specimens, a pamphlet containing the directions is now in preparation and will shortly be issued by the Institution. This will be of considerable size, and, in addition to the merely taxidermical portions, will contain notices of special desiderata in particular portions of the world, a brief indication of the principal divisions of natural history, and notices of the most accessible sources to which the beginner must apply for information respecting the different branches of the subject, the whole illustrated by figures.

"Respectfully submitted.

"SPENCER F. BAIRD.

"DECEMBER 31, 1850."

## 17.

1851. BAIRD, SPENCER F. [Note prefatory to catalogues of specimens of Natural History collected in the Mauvaises Terres and on the Upper Missouri, by T. A. Culbertson.] < *Fifth Annual Report Smithsonian Institution for the year 1850*, p. 133.

## 18.

1851. BAIRD, SPENCER F. (*editor*). Proceedings | of | the American Association | for the | Advancement of Science | Fourth Meeting, | held at New Haven, Conn. August 1850. | — | Washington City. | Published by S. F. Baird, | New York: G. P. Putnam. | — | 1851. [Edited by Spencer F. Baird, Permanent Secretary.] 8vo. pp. xxxiv, 415, folding map.

## 19.

1851. BAIRD, SPENCER F. (*editor*). Proceedings | of | the American Association | for the | Advancement of Science. | Fifth Meeting, | held at Cincinnati, Ohio, May 1851. | — | Published by the liberality of the Citizens of Cincinnati | — | Washington City: | Published by S. F. Baird. | Cincinnati: Ward & Gaylor. | — | 1851. [Edited by Spencer F. Baird, Permanent Secretary.] 8vo. pp. xxiv, 201.

## 20.

1851. BAIRD, SPENCER F. Iconographic | Encyclopædia | of | Science, Literature, and Art. | Systematically arranged by | J. G. Heck, | translated from the German with additions | and edited by-| Spencer F. Baird, A. M., M. D., | Professor of Natural Sciences in Dickinson College, Carlisle, Pa. | Illustrated by five-hundred steel plates, | containing upwards of twelve thousand engravings. | In four vols. | New York: 1852. | Rudolph Garrigue, Publisher | 2 Barclay St., Astor House. In four vols. 8vo of text and two vols. oblong 4to of plates.

Vol. II contains the part relating to "Zoology," pp. 502, plates 74-118.

## P R E F A C E .

"The text of the work which is now presented to the American public is based upon the well known "Bildes Atlas zum Conversations Lexicon," just published in Leipzig, by F. A. Brockhaus, and edited by Mr. John G. Heck. The engravings are impressions from the original steel plates.

"The object steadily kept in view in preparing the Iconographic Encyclopædia has been to furnish a book to which the general reader may apply for an explanation of the principal physical facts which come under his notice. To do this satisfactorily, pictorial representation is necessary, which it is hoped the five hundred quarto plates, with their 12,000 figures, will abundantly furnish.

"Much of the utility of an Encyclopædia depends on its arrangement. The method which the editor's experience of works of this kind has shown to be most convenient, is that of a systematic grouping of distinct treatises, according to their natural affinities. The work thus becomes, as it were, a series of text-books, capable of being used as such, and to which recourse may be had for all the general information required on a given subject.

"To enable the reader, however, to refer readily to any individual fact a copious alphabetical index, or series of indexes, is indispensable. By including numerous cross references, it will be possible to furnish all the facilities of a strictly alphabetical arrangement without any of its disadvantages.

"This, then, is the plan which has been adopted in the arrangement of the Iconographic Encyclopædia. Each article falling within its scope has been treated of independently, and, as far as it goes, is complete in itself. It will not be expected that in the extensive range of subjects involved, even with the exclusion of biography, speculative philosophy, and all abstract sciences in general, any one can be treated in its fullest extent. All that has been aimed at, and indeed all that could have been looked for, was to present a general view of each subject, essentially popular in character, and fitted, more particularly, for those who wish to have the principal facts of numerous works condensed in a single one. Nevertheless, it will be found, on examination, that many of the subdivisions of this Encyclopædia are much fuller in their details than most of the text-books or popular treatises of the day.

Tables of contents and indexes have been prepared for each volume, and no pains have been spared to make these more than usually accurate. The indexes do not refer to words merely, but to facts and ideas, so that the text can be readily consulted upon any given topic. The lists of the figures on the plates will be found under the contents of the text which they are intended to elucidate, with references to the pages in the letter-press where explanations may be looked for. They furnish an immediate explanation of any figure that may arrest the eye. A glossary of German terms and phrases used in a few of the plates is also added to these lists. It would undoubtedly have been more convenient if the few plates which have caused the necessity of such translations had been re-engraved in English; but the expense of doing so would have more than doubled the price of the work, whose unparalleled cheapness could only be secured by a liberal contract for impressions from the excellent German plates.

"To Mr. Heck belongs exclusively the credit of the conception and execution of the original work; and whether we regard its magnitude, or the regularity and efficiency of its performance, it is one that has rarely, if ever, been excelled.

"In undertaking an English version of the Iconographic Encyclopædia it was soon found that a literal translation of the original would not satisfy the wants of the American public. Written in and for Germany, the different subjects were treated of much more fully in relation to that country than to the rest of the world. In some articles, too, owing to the lapse of time or other causes, certain omissions of data occurred, which did not allow of their being considered as representing the present state of science, or as suiting the wants of the United States. This, therefore, has rendered it necessary to make copious additions, alterations, and abridgements in the respective translations; while, in some instances, it has been thought proper to rewrite entire articles. Several of these original papers have been

## 1851. BAIRD SPENCER F.—Continued.

prepared by the editor, and the remainder kindly furnished by some of his friends. Some of these again have relieved him of the burden of translating, and have added much to the merit of their work by judicious alterations and additions; while others have revised his MSS. and enriched them with important suggestions. The authority and value of the assistance thus obtained will be sufficiently evident from the names of those who have so kindly rendered it. To all he here takes the opportunity of returning his warmest acknowledgements.

"The second volume, or the one containing botany, zoology, and anthropology, has been entirely rewritten. The articles in it not prepared by the editor are *Invertebrate Zoology*, by Prof. S. S. Haldeman; *Ornithology*, by John Cassin, Esq.; and *Mammalia*, by Charles Girard, Esq.

"The friends to whom he is indebted for careful revision of his MSS. are Prof. Wolcott Gibbs (*Chemistry*); Prof. J. D. Dana (*Mineralogy*); Prof. L. Agassiz (*Geognosy and Geology*); Dr. Asa Gray (*Botany*); Dr. T. G. Wormley (*Anatomy*); and Herman Ludewig, Esq. (*Geography*).

"Those who have assisted him by translating and editing entire articles are Wm. M. Baird, Esq. (*Ethnology of the Present Day*); Major C. H. Larned, U. S. Army (*Military and Naval Sciences*); F. A. Petersen, Esq. (*Architecture*); Prof. Chas. E. Blumenthal (*Mythology and Religious Rites*); Prof. Wm. Turner (*Fine Arts*); and Samuel Cooper, Esq. (*Technology*).

The editor is likewise under very great obligations to the publisher, not only for affording him every facility in the prosecution of his task, but for unwearied and invaluable assistance in the discharge of his editorial duties. He here also takes occasion to acknowledge his indebtedness to Mr. Wm. H. Smith for revision of the proof-sheets and preparation of the alphabetical indexes; and also to Mr. Robert Craighead for the care which he has displayed in the typographical execution.

"S. F. BAIRD."

"WASHINGTON CITY, D. C., April, 1851."

[Pp. iii—vi.]

## 21.

1851. BAIRD, SPENCER F. Outlines | of | General Zoology | Mammals by Charles Girard | Birds " John Cassin | Reptiles " Spencer F. Baird | Fishes " Spencer F. Baird | Invertebrates " S. S. Haldeman | — | Reprinted from the Iconographic Encyclopædia | of Science, Literature, and Art | — | —New York : | Rudolph Garrigue, Publisher, | 2 Barclay St., Astor House | 1851. [8vo. pp. xxii, 502, xvi.]

"This extract constitutes the Zoological portion of the work entitled 'Iconographic Encyclopædia, xxx.' Much of the Encyclopædia, instead of being translated, has been entirely rewritten, with special reference to adaptation to this country. The part on Zoology, among others, has been compiled entirely anew by its authors, and will be found to contain much original matter never before published. The references to the plates are retained in this extract, though the plates themselves are not supplied." (Spencer F. Baird in preliminary "Notice", p. vii.)

The section relating to Fishes, pp. 197-247, contains many allusions to the fishes of North America, besides presenting a comprehensive view of the state of ichthyological science at the time of its preparation, and many important critical biological and economical notes.

The chapter on Reptilia, pp. 244-289, contains a full discussion of the classification of the group and many important biographical and critical observations, particularly so with reference to the Amphibians.

A new genus of salamanders from the Sandwich Islands is described.

*Aneides*, new genus. .... p. 256

*Aneides lugubris* (Hallowell), Baird. R.

## 22.

1851. BAIRD, SPENCER F. IV. American Ruminants.—On the ruminating animals of North America and their susceptibility of domestication. < *Report of Commissioner of Patents for 1851*, pp. 104-128, 8 plates.

"In the present paper we propose to present, in a few words, the principal characteristics of the ruminating animals of North America, with especial reference to the economical employment of several species, as beasts of burden or draught, as furnishing food of excellent quality, or as yielding valuable materials for the useful arts." ..... p. 104.

*Tarandus Arcticus*, Rich ..... 105, 2d plate.

" *Hastalis*, Agassiz ..... 108.

" *Purofor* ..... 108.

## 1851. BAIRD, SPENCER F.—Continued.

<i>Aleas Americana</i> .....	113, 8th plate.
<i>Elaphus canadensis</i> , Ray.....	116, 6th plate.
<i>Cervus Macrotis</i> , Say.....	118.
" <i>Lewisii</i> , Peale.....	118, 5th plate.
" <i>Leucurus</i> , Douglas.....	119.
<i>Ocyra Americana</i> , Blainville.....	120, 4th plate.
<i>Antilocapra Americana</i> , Ord.....	121, 1st plate.
<i>Ovibos Moschatus</i> , Blainville.....	121, 7th plate, 1st fig.
<i>Ovis Montana</i> , Deam.....	123, 3d plate.
<i>Bison Americanus</i> , Gm.....	124, 7th plate, 2d fig.

## 23.

1852. BAIRD, SPENCER F. Report of Assistant Secretary in charge of the Museum, &c. < *Fourth Annual Report of the Secretary of the Smithsonian Institution, for the year 1851*, pp. 40-52 (Appendices, pp. 52-65).

*Name Siredon tichenigerus*, Baird, n. s., proposed, but no description.....61

## 24.

1852. BAIRD, SPENCER F. An account of natural history explorations in the United States during 1851. < *Sixth Annual Report Smithsonian Institution, for the year 1851*, 1852, pp. 52-56. Appendix A to Report of Assistant Secretary.

## 25.

1852. BAIRD, SPENCER F. Directions | for | Collecting, Preserving, and Transporting | Specimens of Natural History | prepared for the use of the Smithsonian Institution. | [Seal.] | Smithsonian Institution: | Washington. | January, 1852. | 8vo. pp. 23.

    Included in Smithsonian Catalogue of Publications as No. 34. This number was probably shared by the edition under consideration and a later edition published in 1857.

## 26.

1852. BAIRD, SPENCER F. (editor). Proceedings of the American Association for the Advancement of Science. Sixth meeting, held at Albany (N. Y.), August, 1851.—Published by the liberality of the citizens of Albany.—Washington City: | Published by S. F. Baird. New York: G. P. Putnam. | — | 1852. [Edited by S. F. Baird, Permanent Secretary.] 8vo. pp. lx, 412.

## 27.

1852. BAIRD, SPENCER F., and CHARLES GIRARD. Characteristics of some New Reptiles in the Museum of the Smithsonian Institution. [First Part.] < *Proc. Acad. Nat. Sci. Phila.*, vi, 1852-3 (1854), pp. 63-70. Presented for publication April 20; read April 27, 1852.

    " Full descriptions and figures of these species will shortly appear in Capt. Stansbury's Report to Congress on the Great Salt Lake (Utah)." (Preliminary note.)

*Siredon tichenoides*, Baird, n. s. .... 68

        Lake at the head of Santa Fé Creek, N. Mex. R. H. Rem.

*Onemidophorus tigris*, B. and G., n. s. .... 69

        Valley of Great Salt Lake. Capt. Stansbury.

*Crotaphytus Wizlizenii*, B. and G., n. s.

        Santa Fé. Dr. Wizlizenus.—Between San Antonio and El Paso del Norte. Col. J. D. Graham.

*Uta*, B. and G., n. g.

*Uta Stansburiana*, B. and G., n. s.

        Valley of Great Salt Lake. Capt. Stansbury.

*Sceloporus graciosus*, B. and G., n. s.

        Valley of Great Salt Lake.

*Elgaria scincicauda* (Skilton), B. & G. R. .... 60

*Plestiodon Skiltonianum*, B. and G., n. s.

        Oregon, with preceding. Rev. George Geary.



## 1852. BAIRD, SPENCER F., and CHARLES GIRARD—Continued.

- Phrynosoma platyrhinos*, G., n. s.  
Great Salt Lake, Stansbury's party.  
*Phrynosoma modestum*, G., n. s.  
Valley of Rio Grande. Gen. Churchill.—Between, San Antonio, and El Paso  
del Norte. Col. Graham. .... 70  
*Churchillia*, B. and G., n. g.  
*Churchillia bellona*, B. and G., n. s.  
Rio Grande, 1846. Gen. Churchill.  
*Crotalus mormon*, B. and G., n. s.  
Valley of Great Salt Lake. Capt. Stansbury.  
*Heterodus nasicum*, B. and G., n. s.  
Texas. Gen. Churchill.

## 28.

1852. BAIRD, SPENCER F. (editor). Zoology [of the Valley of the Great Salt Lake of Utah]. < *Stansbury's Exploration and Survey of the Valley of the Great Salt Lake of Utah, etc.*, Philadelphia, 1852, App. C, pp. 305-378, pll. i-x (Zoological plates numbered separately). For full title, see under STANSBURY, HOWARD.\*

This part of the Stansbury Report was issued as a separate in June, 1852, with the following title:

Zoology | of the | Valley of the Great Salt Lake | of | Utah. | Mammals by Prof. S. F. Baird.  
| Birds by Prof. S. F. Baird. | Reptiles by Prof. Baird and C. Girard. | Insects by Prof.  
S. S. Haldeman | — | Extracts from Captain H. Stansbury's Report to the U. S. Senate, March  
10, 1852. | — | Philadelphia: Lippincott, Grambo & Co. | June, 1852. 8vo. pp. 305-379. No  
title except that printed on cover.

Though the names of his collaborators appear on the title-page of the Appendix and of the separate, this report seems to have been submitted under the name of Professor Baird, who acted as editor. The introductory chapter, in which the zoological results of the survey are epitomized, pp. 307-8, is signed by him.

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\* 1852. STANSBURY, HOWARD, Captain Corps Topographical Engineers, U. S. Army.  
Special Session. } Senate. { Executive. | — | Exploration and Survey | of the | Valley | or  
March, 1851. } No. 3. | the | Great Salt Lake of Utah, | including | a reconnaissance of a new route through | the  
Rocky Mountains. | By Howard Stansbury, | Captain Corps Topographical Engineers, | U. S.  
Army. | Printed by order of the Senate of the United States. | Philadelphia: | Lippincott,  
Grambo & Co. | 1852. 8vo, pp. 487, 34 plates of scenery, etc., some of them colored; 10 plates  
geology, numbered i-x; 9 plates botany, numbered i-ix; 4 plates botany, numbered i-iv; map  
at p. 154.—All lithographic. Report.—(Narrative). pp. 7-260. APP. A. Table of Distances  
Measured along the route, etc., pp. 270-294. APP. B. Latitudes and longitudes of principal  
triangulation stations, etc., pp. 295-304. APP. C. Zoology, pp. 305-379. Mammals, by Prof.  
Spencer F. Baird, pp. 309-313; Birds, by Prof. Spencer F. Baird, pp. 314-335; Reptiles, by  
Prof. Baird and Charles Girard, pp. 336-365; Insects, by Prof. Haldeman, pp. 366-378; On cer-  
tain Insect Larvæ, by Titian E. Peale, p. 379. APP. D. Botany, by Prof. John Torrey,  
pp. 381-398. APP. E. Geology and Paleontology, by Prof. Jas. Hall, pp. 399-414. APP. F.  
Chemical Analysis, etc., by Dr. L. D. Gale, pp. 414-461. APP. G. Meteorological Observa-  
tions, pp. 423-478. INDEX, pp. 479-487. A supplementary volume, without titles, containing  
two maps.

Published early in 1852, probably late March or early April.

"An edition of the same work was subsequently printed by the Public Printer for the House of Representatives in 1853. This is much inferior in typography and illustrations."—BAIRD.

1852. STANSBURY, HOWARD. An | expedition | to the | valley of the Great Salt Lake | of  
Utah: | including | a description of its geography, natural history, and | minerals, and an  
analysis of its waters: | with an authentic account of the Mormon settlement. | Illustrated by  
numerous beautiful plates, | from drawings taken on the spot. | Also a reconnaissance of a  
new route through the Rocky Mountains and two large and accurate maps of that region.  
| — | By Howard Stansbury, | Captain Corps Topographical Engineers, United States Army.  
| — | Philadelphia: | Lippincott, Grambo & Co. | 1852.

A separate edition, issued from the same stereotype and lithographic plates as the official government edition; the text and illustrations are the same.

## 29.

1852. BAIRD, SPENCER F. Mammals [of the Valley of the Great Salt Lake]. < *Stansbury's Exploration and Survey of the Valley of the Great Salt Lake of Utah, etc.*, Philadelphia, 1852 [App. C.] pp. 309-313.

1. *Vulpes macroturus*, Baird, n. s. .... 309  
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2. *Putorius vison*, Linn. .... 311
3. *Putorius erminea*, Linn.
4. *Martes labradoria*, Sabine.
5. *Gulo luscus*, Linn.
6. *Fiber zibethicus*, Linn. .... 312
7. *Spermophilus 13 lineatus*, Mitchell.
8. *Ovis montana*, Desm.

## 30.

1852. BAIRD, SPENCER F. (Mammals) Collected by Lieutenant Abert (in New Mexico). < *Stansbury's Exploration and Survey of the Valley of the Great Salt Lake of Utah, etc.* Philadelphia, 1852. [App. C.] p. 313.

1. *Pseudotoma castanops*, Baird, n. s. .... 313  
Prairie road to Bent's Fort, N. Mex. Lieut. Abert.

Included in the report on the mammals of the Valley of the Great Salt Lake.

## 31.

1852. BAIRD, SPENCER F. Birds [of the Valley of the Great Salt Lake]. < *Stansbury's Exploration and Survey of the Valley of the Great Salt Lake of Utah, etc.* Philadelphia, 1852. [App. C.] pp. 314-325 [+ 325-335 extraneous bird matter].

1. *Buteo borealis*, Bp. .... 314
2. *Accipiter fuscus*, Bp.
3. *Athene hypugaea*, Cassin.
4. *Bialia macroptera*, Baird, n. s.  
Salt Lake City, March 18, 1850. Capt. H. Stansbury.
5. *Parus septentrionalis*, Harris. .... 316
6. *Sturnella neglecta*, Aud.
7. *Niphaea oregona*, Aud.
8. *Pencaea lincolni*, Aud. .... 317
9. *Leucosticte tephrocotis*, Bp.
10. *Otocoris occidentalis*, McCall. .... 318
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13. *Charadrius vociferus*, Linn.
14. *Grus canadensis*, Temm.
15. *Botaurus lentiginosus*, Montagu. .... 320
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17. *Symphemia semipalmata*, Hart.
18. *Recurvirostra americana*, Gm.
19. *Cygnus americanus*, Sharpless. .... 321
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28. *Clangula albeola*, Bp.
29. *Pelecanus trachyrrhynchus*, Lath.
30. *Phalacrocorax dilophus*, Sw.
31. *Columbus glacialis*, L.

## 31.

1852. BAIRD, SPENCER F. Birds collected in New Mexico by Lieut. Abert. < *Stansbury's Exploration and Survey of the Valley of the Great Salt Lake of Utah, etc.* Philadelphia, 1852. [App. C.] pp. 325, 326.

- \*1. *Falco sparverius*, L. .... 325
- 2. *Pipilo aberti*, Baird, n. s.  
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- \*3. *Agelaius zanthocephalus*, L. .... 326
- \*4. *Picus varius*, L.
- \*5. *Columba leucoptera*, L.
- \*6. *Callipepla squamata*, Vig.
- 7. *Callipepla gambeli*, Nutt.
- \*8. *Actiturus bartramius*, Wils.
- 9. *Recurvirostra occidentalis*, Vig.

## 32.

1852. BAIRD, SPENCER F. List of birds inhabiting America, west of the Mississippi, not described in Audubon's Ornithology. < *Stansbury's Exploration and Survey of the Valley of the Great Salt Lake, etc.* Philadelphia, 1852. [App. C.] pp. 327-335.

"The list includes a few specimens recently described from the regions east of the Mississippi."

153 species are enumerated by name, with citation of description and note on habitat.

"This list of 153 spp. contains a large proportion of synonyms or species not since satisfactorily determined to inhabit North America north of Mexico. The list makes no apparent claim to critical precision, ostensibly showing which species have been ascribed to the region in question, but not necessarily vouching for their occurrence there. 'California' long remained a vague term with ornithologists." COUZE, 1878.

BIRDS INHABITING AMERICA, WEST OF THE MISSISSIPPI, NOT DESCRIBED  
IN AUDUBON'S ORNITHOLOGY.

<i>Archibuteo ferrugineus</i> , Licht	p. 327
<i>Rosthranus sociabilis</i> , Vieill.	
<i>Stris frontalis</i> , Licht.	
<i>Acanthya vauzii</i> , Towns.	
<i>Chordeiles brasilianus</i> , (Gm.)	
<i>Anrostomus nuttalli</i> , Aud.	
<i>Ceryle americana</i> , Bole.	
<i>Ornismya costae</i> , Bourcier.	
<i>Controstrum ornatum</i> , Lawr.	
<i>Picolaptes brunneicapillus</i> , Laf.	
<i>Troglodytes albifrons</i> , Giraud.	
<i>Vireo huttoni</i> , Cassin	p. 328
<i>Vireo belli</i> , Aud.	
<i>Vireo atricapilla</i> , Woodhouse.	
<i>Vireosylva philadelphica</i> , Cassin.	
<i>Vireosylva altiloqua</i> , Vieill.	
<i>Sialia macroptera</i> , Baird.	
<i>Lanius elegans</i> , Sw.	
<i>Lanius excubitorides</i> , Sw.	
<i>Hypocolius ampelinus</i> , Bp.	
<i>Icteria velasquezii</i> , Bp.	
<i>Oulicivora atricapilla</i> , Sw.	
<i>Sylvicola olivacea</i> , Giraud.	
<i>Vermivora brevipennis</i> , Giraud.	
<i>Turdus rufopalliatu</i> s, Lafresn.	
<i>Merula olivacea</i> , Brewer.	
<i>Mimus leucopterus</i> , Vig.	
<i>Mimus longirostris</i> , Lafresn.	
<i>Toxostoma rediciva</i> , Gambel.	
<i>Toxostoma curvirostris</i> , Swainson	p. 329
<i>Toxostoma lecontei</i> , Lawr.	

\* Name only.

## 1852. BAIRD, SPENCER F.—Continued.

- Motacilla leucoptera*, Vig. Zool. of Blossom.  
*Agrodoma epraguet*, Aud.  
*Saxicola ananthoides*, Vig.  
*Saurophagus sulphuratus*, Swainson.  
*Saurophagus bairdii*, Gambel .....p. 329  
*Tyrannus cassinii*, Lawrence.  
*Tyrannula cayanaensis*, Gm.  
*Tyrannula lawrenceii*, Giraud.  
*Tyrannula cinerascens*, Lawrence.  
*Tyrannula flaviventris*, Baird.  
*Tyrannula minima*, Baird.  
*Pyrocephalus rubineus*, Bodd.  
*Setophaga vulnerata*, Wagler.  
*Setophaga belli*, Giraud.  
*Setophaga rubra*, Swainson.  
*Setophaga picta*, Swainson.  
*Setophaga rubrifrons*, Giraud.  
*Embernagra rustirgata*, Lawrence .....p. 330  
*Embernagra blandingiana*, Gambel.  
*Sialator rustiventris*, Vig. Zool.  
*Euphonia elegantissima*, Bp.  
*Spermophila albogularis*, Swainson.  
*Rhamphopsis flammitigerus*, Jard.  
*Chrysopoga typica*, Bp.  
*Fringilla meruloides*, Vig.  
*Zonotrichia querula*, Nutt.  
*Zonotrichia gambeli*, Nutt.  
*Zonotrichia cassinii*, Woodhouse.  
*Chrysomitris lawrenceii*, Cassin.  
*Pipilo fuscus*, Sw.  
*Pipilo oregona*, Bell.  
*Pipilo aberti*, Baird.  
*Emberiza lecontei*, Aud.  
*Emberiza bairdii*, Aud.  
*Emberiza bilineata*, Cassin.  
*Emberiza belli*, Cassin .....p. 331  
*Carpodacus obscurus*, McCall.  
*Carpodacus familiaris*, McCall.  
*Coccothraustes ferreo-rostris*, Vig.  
*Cardinalis sinuatus*, Bp.—Lawrence.  
*Pyrrhula inornata*, Vig.  
*Leucosticte greiseinucha*, Brandt.  
*Plectrophanes maccoyensis*, Lawrence.  
*Passerella unalaschensis*, Bp.  
*Passerella rufina*, Brandt.  
*Euspiza arctica*, Bp.  
*Alauda rufa*, Lath.  
*Otocoris occidentalis*, McCall.  
*Sturnella neglecta*, Aud.  
*Quiscalus macrourus*, Sw.  
*Scolecophagus mexicanus*, Sw.  
*Pendulinus californianus*, Less.  
*Parocotius auricollis*, De Wied.  
*Xanthornus mexicanus*, Brist.  
*Xanthornus affinis*, Lawrence.  
*Icterus cucullatus*, Sw.  
*Icterus melanocephalus*, Wagler.  
*Icterus vulgaris*, Daud.  
*Icterus frenatus*, Licht.  
*Chamaea fasciata*, Gambel.  
*Lophophanes septentrionalis*, Harris.

## 1862. BAIRD, SPENCER F.—Continued.

- Lophophanes inornatus*, Gambel.  
*Lophophanes wollweberi*, Bp.  
*Lophophanes atricristatus*, Cassin.  
*Parus montanus*, Gambel.  
*Gymnokitta cyanocephala*, De Wied.  
*Oyanocorax coronatus*, Sw.  
*Oyanocorax luxuosus*, Lesson.  
*Oyanocorax cassinii*, McCall.  
*Garrulus californicus*, Vig. .... p. 333  
*Pica beecheyii*, Vig.  
*Orotophaga* ——— †  
*Piaya cayanaensis*, Gambel.  
*Geococcyx affinis*, Hartlaub.  
*Geococcyx viaticus*, Wagler.  
*Melanerpes albolavatus*, Cassin.  
*Melanerpes formicivorus*, Swainson.  
*Oenturus santacruzi*, Bp.  
*Oenturus flaviventris*, Swainson.  
*Oenturus elegans*, Sw.  
*Oolaptes mexicanoides*, Lafres.  
*Oolaptes ayresii*, Aud.  
*Oolaptes collaris*, Vig.  
*Picus scapularis*, Vig.  
*Picus nuttallii*, Gambel.  
*Picus scalaris*, Wagler.  
*Picus lecontei*, Jones.  
*Columba solitaria*, McCall.  
*Columba flavirostris*, Wagler. .... p. 334  
*Penelope poliocephala*, Wagler.  
*Ortalia vetula*, Wagler.  
*Cyrtonix massena*, Gould.  
*Callipepla gambeli*, Nutt.  
*Callipepla picta*, Dougl.  
*Callipepla elegans*, Less.  
*Callipepla douglassii*, Vig.  
*Callipepla squamata*, Vig.  
*Streptopelia melanocephalus*, Vig.  
*Numenius rufiventris*, Vig.  
*Macrorhamphus scolopaceus*, Lawrence.  
*Recurvirostra occidentalis*, Vig.  
*Anser nigricans*, Lawr.  
*Anas europasianus*, Vig.  
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*Dendrocygna autumnalis*, Eyton.  
*Cyanopterus rafflesii*, King.  
*Oidemia velvetina*, Cassin. .... p. 335  
*Larus brachyrhynchus*, Gould.  
*Larus belcheri*, Vig.  
*Sterna elegans*, Gambel.  
*Sterna caspia*, L.—Lawrence.  
*Procellaria meridionalis*, Lawrence.  
*Thalassidroma furcata*, Lath.  
*Thalassidroma fregetta*, Kuhl.  
*Phalacrocorax perspicillatus*, Pall.  
*Phalacrocorax penicillatus*, Brandt.  
*Uria brevirostris*, Vig.  
*Mergulus cirrocephalus*, Vig.  
*Mergulus cassinii*, Gambel.  
*Ptychorhamphus aleuticus*, Brandt.  
*Brachyrhamphus wrangelli*, Brandt.  
*Brachyrhamphus brachypterus*, Brandt.

## 33.

1852. BAIRD, SPENCER F., and CHARLES GIRARD. Reptiles [of the Valley of the Great Salt Lake]. < *Stansbury's Exploration and Survey of the Valley of the Great Salt Lake*. Philadelphia, 1852. [App. C.] pp. 336-353 [+ 354-365 by GIRARD. A Monographic Essay on the genus *Phrynosoma*.] plates in following order: i, ii, iii, vi, v, iv [+ viii, vii in Girard's paper].

These species were described in a previous paper, No. 27.

<i>Siredon lichenoides</i> , Baird .....	p. 336, pl. i.
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<i>Orotaphytus</i> , Holbrook .....	p. 339.
<i>Orotaphytus Wislizenii</i> , B. and G. ....	p. 340, pl. iii.
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<i>Holbrookia maculata</i> , Girard .....	p. 342, pl. vi, fig. 1-3.
<i>Uta</i> , Baird and Girard .....	p. 344.
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<i>Sceloporus graciosus</i> , B. and G. ....	p. 346, pl. v, fig. 1-3.
<i>Elgaria scincicauda</i> , B. and G. ....	p. 348, pl. iv, fig. 1-3.
<i>Platiodon Skiltonianum</i> , B. and G. ....	p. 348, pl. iv, fig. 4-6.
<i>Churchillia</i> , B. and G. ....	p. 350.
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<i>Crotuber mormon</i> , B. and G. ....	p. 351.
<i>Heterodon nasicus</i> , B. and G. ....	p. 352.

## 34.

1852. BAIRD, SPENCER F. [Note in reference to *Vulpes Utah*, Aud. and Bach.] < *Proc. Acad. Nat. Sci. Phila.*, vi, 1852-3 (1854), p. 124. Read Aug. 3, 1852. Abstract of communication claiming priority for name *Vulpes macrourus*, Baird, over *Vulpes utah*, Aud. and Bach.

## 35.

1852. BAIRD, SPENCER F., and CHARLES GIRARD. Characteristics of some New Reptiles in the Museum of the Smithsonian Institution. By Spencer F. Baird and Charles Girard. Second Part. Containing the species of the Saurian order, collected by John H. Clark, under Col. J. D. Graham, head of the Scientific Corps, U. S. and Mexican Boundary Commission, and a few others from the same adjoining territories, obtained from other sources, and mentioned under their special headings. < *Proc. Acad. Nat. Sci. Phila.*, vi, pp. 125-9. Presented for publication July 6, ordered printed Aug. 31, 1852.

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<i>Orotaphytus dorsalis</i> , B. and G., n. s. ....	
Desert of Colorado, Cal. J. L. Leconte.	
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Found with preceding species.	

## 1852. BAIRD, SPENCER F., and CHARLES GIRARD—Continued.

- Onemidophorus gularis*, B. and G., n. s.  
Indianola, Tex., and the Valley of the Rio San Pedro.
- Onemidophorus perplexus*, B. and G.  
Valley of the Rio San Pedro.
- Onemidophorus gracilis*, B. and G.  
Desert of Colorado. J. L. Leconte.
- Onemidophorus praeignis*, B. and G., n. s.  
Chagres. C. B. Adams.
- Plestiodon obsoletum*, B. and G., n. s.  
Valley of the Rio San Pedro.
- Elgaria nobilis*, B. and G., n. s.  
Fort Webster, New Mexico.

## 36.

1852. BAIRD, SPENCER F., and CHARLES GIRARD. Characteristics of some New Reptiles in the Museum of the Smithsonian Institution. By Spencer F. Baird and Charles Girard. Third Part. Containing the Batrachians in the collection made by J. H. Clark, Esq., under Col. J. D. Graham, on the United States and Mexican Boundary. < *Proc. Acad. Nat. Sci. Phila.*, vi, p. 173. Presented for publication Oct. 21, ordered printed Oct. 26, 1852.

- Amblystoma proserpine*, B. and G., n. s. .... 178  
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- Rana areolata*, B. and G., n. s.  
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- Bufo punctatus*, B. and G., n. s.  
Rio San Pedro of the Rio Grande del Norte.
- Bufo granulatus*, B. and G., n. s.  
Between Indianola and San Antonio, Texas.

## 37.

1852. BAIRD, SPENCER F., and CHARLES GIRARD. Descriptions of New Species of Reptiles, collected by the U. S. Exploring Expedition under the command of Capt. Charles Wilkes, U. S. N. First Part.—Including the species from the Western Coast of America. < *Proc. Acad. Nat. Sci. Phila.*, vi, pp. 174–177. Presented for publication Oct. 6, ordered printed Oct. 26, 1852.

- Amblystoma tenebrosus*, B. and G., n. s. .... 174  
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- Rana aurora*, B. and G., n. s.  
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- Wenona*, B. and G., n. g.
- Wenona isabella*, B. and G., n. s.  
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## 1852. BAIRD, SPENCER F., and CHARLES GIRARD—Continued.

- Oncomaria tenuis*, B. and G., n. s.  
Puget Sound.  
*Orotalus lucifer*, B. and G., n. s.  
Oregon and California.  
*Emys marmorata*, B. and G., n. s.  
Puget Sound.

## 38.

1853. BAIRD, SPENCER F., and CHARLES GIRARD. List of Reptiles collected in California by Dr. John L. Leconte, with description of New Species. < *Proc. Acad. Nat. Sci. Phila.*, vi, pp. 300-302. Presented for publication Feb. 15, ordered printed Feb. 22, 1853

## OPHIDIANS.

1. *Orotalus lucifer* !, B. and G. .... 300  
San Diego, Cal.
2. *Eutania ordinoides*, B. and G.  
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3. *Bassanius vetustus*, B. and G., n. s. (name only).  
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4. *Pitheophis annexens*, B. and G., n. s.  
San Diego.
5. *Rhinocheilus Lecontei*, B. and G., n. s.  
San Diego.
6. *Oncos mitis*, B. and G., n. s.  
San José.
7. *Diadophis amabilis*, B. and G., n. s.  
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8. *Rana humilis*, B. and G., n. s.  
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2. *Basilophus occidentalis*, B. and G.  
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3. *Uta Stansburiana*, B. and G.  
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San Diego and San Francisco.
5. *Phrynosoma coronatum*, Blainv.  
San Diego.
6. *Onemidophorus gracilis*, B. and G.  
Desert of Colorado.
7. *Hesperia scincicauda*, B. and G.  
California.
8. *Plestiodon Skiltonianum*, B. and G.  
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9. *Anniella pulchra*, Gray.  
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3. *Litoria occidentalis*, B. and G., n. s.  
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4. *Rana Lecontei*, B. & G., n. s.  
San Francisco.
5. *Aneides lugubris*, Baird.  
San Francisco.
7. *Taricha laevis*, B. and G., n. s.  
San Francisco.



1853. BAIRD, SPENCER F., and CHARLES GIRARD. Catalogue of North American Reptiles in the Museum of the Smithsonian Institution. — Part I.—Serpents. By S. F. Baird and C. Girard. — [Seal of the Smithsonian Institution.] Washington: Smithsonian Institution. January, 1853. January 1, 1853. [Accepted for publication November, 1852.] 8vo, pp. xvi, 172.

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Although published under the names of the two authors as a joint production, this work is a series of monographs for which the individual authors only claimed to be responsible. The record of authorship is lost. In the following list of species discussed, the parts written by Professor Baird, so far as he can recall the matter to memory, are printed in *italic type*, those by Girard in *heavy-face type*.

"In the present catalogue it is proposed to present a systematic account of the collection of North American Serpents in the museum of the Smithsonian Institution. In the Appendix will be found such species not in possession of the Institution, as could be borrowed for description, as well as notes on more or less authentic species of which no specimens could be found.

"A complete synonymy of all the species has not been attempted, as tending to swell the bulk of a catalogue too much. All those, however, necessary to a proper understanding of the history or character of the species, have been introduced, and all the synonyms quoted have been actually verified by original reference.

"Owing to the want of osteological preparations, it has been a difficult task to arrange the genera in a natural succession. In many cases forms are now combined which will hereafter necessarily be widely separated. The almost entire deficiency of modern general works upon the *Colebridae*, has also been a serious obstacle to any correct idea of a natural system. The forthcoming work of M. M. Duméril will undoubtedly clear up much of the obscurity which now exists. But when systematic writers all carefully avoid the subject of the Ophidians, each waiting for the others to make the first step, the attempt to combine genera by well-marked though perhaps artificial points of relation, will it is hoped be looked upon with indulgence, even after more comprehensive and extended investigations shall render it necessary to break up the combinations here adopted.

"The collections upon which the original descriptions of the present catalogue have been based are as follows:

- Spencer F. Baird. Species from Massachusetts, New York, Ohio, and Pennsylvania.
- Charles Conrad. Maine, Massachusetts, and South Carolina.
- Rev. Charles Fox. Species from Eastern Michigan.
- Dr. P. R. Hoy. Species from Eastern Wisconsin.
- Prof. L. Agassiz. Lake Superior, Lake Huron, and Florida.
- Dr. J. P. Kirtland. Northern Ohio.
- Dr. W. Edwards. Western Pennsylvania.
- Miss Valeria Hancey. Eastern Shore of Maryland.
- Dr. C. R. R. Kennerly. Northern Virginia.
- John H. Clark. Maryland, Texas, New Mexico, and Sonora.

## 1853. BAIRD, SPENCER F., and CHARLES GIRARD—Continued.

- John Varden. District of Columbia and Louisiana.  
 Dr. J. B. Barratt. Western South Carolina.  
 Miss Charlotte Paine and Mrs. M. E. Daniel. Western S. Carolina.  
 Dr. S. B. Barker. Charleston, S. C.  
 Prof. F. S. Holmes and Dr. W. J. Burnett. South Carolina.  
 R. R. Cuyler and Dr. W. L. Jones. Georgia.  
 D. C. Lloyd. Eastern Mississippi.  
 Dr. B. F. Shumard and Col. B. L. C. Wallis. Mississippi.  
 James Fairie. Mexico and Western Louisiana.  
 Capts. R. B. Marcy and G. B. McClellan, U. S. A. Red River, Ark.  
 Ferdinand Lindheimer. Central Texas.  
 Col. J. D. Graham, U. S. A. The specimens collected while on the U. S. and Mex. Boundary Survey, by Mr. J. H. Clark, viz., in Texas, New Mexico, and Sonora.  
 Maj. W. H. Emory. Specimens collected on the U. S. and Mexican Boundary Survey, by Arthur Schott, at Eagle Pass, Tex. and by J. H. Clark, in Texas and New Mexico.  
 Gen. S. Churchill, U. S. A. Valley of the Rio Grande.  
 Dr. L. Edwards, U. S. A. Northern Mexico.  
 Dr. Wm. Gambel. New Mexico and California.  
 Dr. John L. Le Conte. Littoral California.  
 Dr. C. C. Boyle and J. S. Bowman. Central California.  
 Dr. A. J. Skilton. Species collected in California by Henry Moores, Esq.  
 U. S. Exploring Expedition. Littoral California and Oregon.  
 Academy of Natural Sciences of Philad. Various unique specimens described by Dr. Holbrook.  
 Boston Society of Natural History. California.  
 "SMITHSONIAN INSTITUTION, January 5, 1853."

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1852. BAIRD, SPENCER F. Description of a new Species of *Sylvicola*. < *Ann. Lye. Nat. Hist. N. Y.*, v, 1852, pp. 217, 218, pl. vi.  
*Sylvicola Kirtlandii*, Baird, n. s. p. 217, pl. vi.  
 Shot near Cleveland, Ohio, by Mr. Charles Pease, May 18, 1851.

## 41.

1853. BAIRD, SPENCER F. Report of the Assistant Secretary, in charge of the Museum, &c. < *Seventh Annual Report Smithsonian Institution for the year 1852, 1853*, pp. 45-58. Appendices, pp. 58-73.

## 42.

3. BAIRD, SPENCER F. Account of scientific explorations and reports on explorations, made in America during the year 1852. < *Seventh Annual Report Smithsonian Institution for the year 1852, 1853*, pp. 58-65. Appendix A of Assistant Secretary's Report.

## 43.

3. BAIRD, SPENCER F., and CHARLES GIRARD. Descriptions of some new fishes from the River Zuni. < *Proc. Acad. Nat. Sci. Phila.*, vi, 1853, pp. 368, 369.

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3. BAIRD, SPENCER F., and CHARLES GIRARD. "A communication \* \* \* upon a species of frog, and another of toad \* \* \* recently described from specimens in the Herpetological Collections of the U. S. Exploring Expedition." < *Proc. Acad. Nat. Sci. Phila.*, vi, 1853, pp. 378-379. Read Aug. 9, 1853.

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Puget Sound.	
<i>Bufo columbianus</i> , B. and G., n. s.	
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## 45.

3. BAIRD, SPENCER F., and CHARLES GIRARD. Descriptions of New Species of Fishes collected by Mr. John H. Clark, on the U. S. and Mexican Boundary Survey, under Lt. Col. Jas. D. Graham. < *Proc. Acad. Nat. Sci. Phila.*, vi, 1853, pp. 387-390. Read Aug. 30, 1853.

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## 46.

## 1853. BAIRD, SPENCER F., and CHARLES GIRARD. Description of New Species of Fishes collected by Captains R. B. Marcy and Geo. B. McClellan in Arkansas. &lt;Proc. Acad. Nat. Sci. Phila., vi, 1853, pp. 390-392. Read Aug. 30, 1853.

1. *Pomotis breviceps*, B. and G., n. s. .... 300  
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Otter Creek, Arkansas.

## 47.

## 1853. BAIRD, SPENCER F., and CHARLES GIRARD. Fishes [of the Zuni River]. &lt;Sturgeaves' Report of an Expedition down the Zuni and Colorado Rivers. Washington, 1853. pp. 148-152.

Descriptions and synonymy of the following genus and species: (See No. 43, above.)

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## 48.

## 1853. BAIRD, SPENCER F. [Directions for making collections in Natural History, prepared for the use of the parties engaged in the Exploration of a route for the Pacific Railroad along the 49th parallel.] 4to, about 10 pp. Printed on thin blue paper.

I have not been able to find a copy of this paper. The above title is supplied from the memory of Professor Baird.—G. B. G.

## 49.

## 1853. BAIRD, SPENCER F., and CHARLES GIRARD. Reptiles [of the Red River Region]. &lt;Marcy and McClellan's Exploration of the Red River of Louisiana in the year 1852. Washington, 1853. (Appendix F.) 8vo. pp. 217-244.

18 (10 + 6 + 2) species are described, and of these 11 are figured. Those designated by a \* are here figured for the first time. Generic and specific diagnoses and descriptions are given and a partial synonymy.

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 Red River Region, June 6, 1852.  
 V. *Onemidophorus*, Wagler ..... 239.  
 5. *Onemidophorus gularis*, B. & G. .... 239, \*pl. x, figs. 1-4.  
 VI. *Lygosoma*, Gray ..... 240.  
 6. *Lygosoma lateralis* (Say), D. & B. .... 241.

## BATRACHIANS.

1. *Bufo cognatus*, Say ..... 242, \*pl. xi.  
 2. *Rana pipiens*, Latreille ..... 243.

## 50.

1853. BAIRD, SPENCER F., and CHARLES GIRARD. Fishes [of the Red River Region].  
 < Marcy and McClellan's Exploration of the Red River of Louisiana in the year  
 1852. Washington, 1853. (Appendix F.) pp. 245-252.

6 species are described and all are figured.

1. *Pomotis longulus*, B. & G. .... 245, pl. xli (Zoology).  
 2. *Pomotis breviceps*, B. & G. .... 246, pl. xlii.  
 3. *Leuciscus vigilax*, B. & G. .... 248, pl. xiv, figs. 1-4.  
 4. *Leuciscus bubalinus*, B. & G. .... 249, pl. xiv, figs. 5-8.  
 5. *Leuciscus lutrensis*, B. & G. .... 251, pl. xiv, figs. 9-12.

## 51.

1854. BAIRD, SPENCER F., and CHARLES GIRARD. Descriptions of new species of  
 Fishes collected in Texas, New Mexico and Sonora by Mr. John H. Clark, on  
 the U. S. and Mexican Boundary Survey, and in Texas by Capt. Stewart Van  
 Vliet, U. S. A. Second Part. < Proc. Acad. Nat. Sci. Phila., vii, 1854, pp.  
 24-29. Presented for publication March 7, ordered printed March 28, 1854.

1. *Pomotis speciosus*, B. & G., n. s. .... p. 24  
 Brownsville, Tex.  
 2. *Pomotis fallax*, B. & G., n. s. ....  
 Elm Creek, Tex.  
 3. *Pomotis consensifrons*, B. & G., n. s. ....  
 Rio Cibolo, Tex.  
 4. *Pomotis nefastus*, B. & G., n. s. ....  
 Rio Cibolo and Rio Silado, Tex.  
 5. *Pomotis heros*, B. & G., n. s. .... 25  
 Rio Cibolo.  
 6. *Bryttus longulus*, B. & G., n. s. ....  
 Rio Cibolo.  
 7. *Gryotes nuccensis*, B. & G., n. s. ....  
 Rio Frio and Rio Nueces, Tex.  
*Herichthys*, B. & G., n. g.



## 1854. BAIRD, SPENCER F., and CHARLES GIRARD—Continued.

8. *Herichthys cyanoguttatus*, B. & G., n. s.  
Brownsville, Tex. . . . . p. 25
9. *Atherichthys*, B. & G., n. g. . . . .
9. *Atherichthys marinus* (Mitch.), B. & G. R.  
Indianola, Tex. R. . . . .
10. *Arius equestris*, B. & G., n. s.  
Indianola, Tex. R. . . . .
11. *Pimelodus affinis*, B. & G., n. s.  
Rio Grande del Norte. . . . .
12. *Astyanax*, B. & G., n. g. . . . .
12. *Astyanax argentatus*, B. & G., n. s. . . . . 27  
Rio Nueces, Tex. . . . .
13. *Oatostomus congestus*, B. & G., n. s.  
Rio Salado. . . . .
14. *Oatostomus Olarkii*, B. & G., n. s.  
Rio Santa Cruz, Gila. . . . .
15. *Oatostomus plebeius*, B. & G., n. s. . . . . 28  
Rio Mimbres of Rio Gila. . . . .
16. *Oatostomus insignis*, B. & G., n. s.  
Rio San Pedro of Rio Gila. . . . .
17. *Caryiodes tumidus*, B. & G., n. s.  
Near Fort Brown, Tex. . . . .
18. *Gila gibbosa*, B. & G., n. s.  
Rio Santa Cruz. . . . .
19. *Gila pulchella*, B. & G., n. s. . . . . 29  
Rio Mimbres of Rio Gila. . . . .

## 52.

1854. BAIRD, SPENCER F., and CHARLES GIRARD. Notice of a new genus of Cyprinidae. < *Proc. Acad. Nat. Sci. Phila.*, vii, 1854, p. 158.

- Cochlognathus*, B. & G., n. g. . . . . 158
- Cochlognathus ornatus*, B. & G., n. s.  
Brownsville, Tex. . . . .

## 53.

1854. BAIRD, SPENCER F. Report of the Assistant Secretary (of the Smithsonian Institution) in charge of publications, exchanges and natural history. < *Eighth Annual Report Smithsonian Institution* (1853), 1854. pp. 34-37.

## 54.

1854. BAIRD, SPENCER F., and CHARLES GIRARD. Descriptions of new species of Fishes collected in Texas, New Mexico and Sonora, by Mr. John H. Clark, on the U. S. and Mexican Boundary Survey, and in Texas by Capt. Stewart Van Vleet, U. S. A. Second Part. < *Proc. Acad. Nat. Sci. Phila.*, vii, 1854-55, pp. 24-29. (Read March 28, 1854.)

## 55.

1854. BAIRD, SPENCER F. Descriptions of New Genera and Species of North American Frogs. < *Proc. Acad. Nat. Sci. Phila.*, vii, pp. 59-62. Presented for publication April 4, ordered printed April 25, 1854.

Seventeen new species and one new genus are characterized.

- Hylas* . . . . . 59
1. *Aoris orepitans*, Baird, n. s.  
Northern States generally. . . . .
2. *Aoris acheta*, Baird, n. s.  
Key West, Florida. . . . .
- Chorophilus*, Baird, n. s. . . . . 60
- Type, *Chorophilus nigratus* (Baird), Holbrook.

## 1854. BAIRD, SPENCER F.—Continued.

*Helocates*, Baird, n. s.

- 3.
- Helocates fortiarum*
- , Baird, n. s.

Carlisle, Pa.

- 4.
- Helocates triscoriatus*
- (Max. von Wied.), Baird, n. s.

Michigan, Illinois, Wisconsin, and the Upper Missouri.

- 5.
- Helocates Clarkii*
- , Baird, n. s.

Galveston and Indianola, Tex.

- 6.
- Hyla Richardii*
- , Baird, n. s.

Cambridge, Mass.

- 7.
- Hyla Andersonii*
- , Baird, n. s.

Anderson, South Carolina.

- 8.
- Hyla eximia*
- , Baird, n. s. .... p. 61

City of Mexico.

- 9.
- Hyla Vankhetti*
- , Baird, n. s.

Brownsville, Tex.

- 10.
- Hyla affinis*
- , Baird, n. s.

Northern Sonora.

*Ranidae*.

- 11.
- Rana montezumae*
- , Baird, n. s.

City of Mexico.

- 12.
- Rana septentrionalis*
- , Baird, n. s.

Northern Minnesota.

- 13.
- Rana sinuata*
- , Baird, n. s.

Sackett's Harbor, New York.

- 14.
- Rana pretiosa*
- , B. and G. .... 62

Washington Territory.

- 15.
- Rana cantabrigensis*
- , Baird, n. s.

Cambridge, Mass.

- 16.
- Rana Boylii*
- , Baird, n. s. .... 62

California, interior.

- 17.
- Scaphiopsis Couchii*
- , Baird, n. s.

Coahuila and Tamaulipas.

## 56.

1854. BAIRD, SPENCER F. Descriptions of New Birds collected between Albuquerque, N. M., and San Francisco, California, during the winter of 1853-54, by Dr. C. B. R. Kennerly and H. B. Möllhausen, Naturalists attached to the Survey of the Pacific R. R. Route, under Lt. A. W. Whipple. < *Proc. Acad. Nat. Sci. Phila.*, vii, pp. 118-20. Presented for publication June 20, ordered printed June 27, 1854.

Eight new species are characterized.

- Oypselus melanoleucus*, Baird, n. s. .... p. 118  
Camp 123, West of San Francisco Mountains.

- Oulicicora Plumbea*, Baird, n. s. .... 118  
Bill-Williams' Fork.

- Psaltria Plumbea*, Baird, n. s.  
Little Colorado, N. M.

- Oyanocitta macrolopha*, Baird, n. s.  
100 miles west of Albuquerque, N. M.

- Carpodacus Cassinii*, Baird, n. s. .... 119  
Pueblo Creek, N. M.

- Zonotrichia fallax*, Baird, n. s.  
Pueblo Creek, N. M.

- Pipilo mesoleucus*, Baird, n. s.  
Copper Mines, n. s.

- Oenturus uropygialis*, Baird, n. s. .... 121  
Bill-Williams' Fork of Colorado, N. M.

## 57.

1854. BAIRD, SPENCER F., and CHARLES GIRARD. [Cyprinidae of Heerman's Collection.] < *Girard's Descriptions of New Fishes collected by Dr. A. S. Heerman* (Proc. Acad. Nat. Sci. Phila., 1854, pp. 129-156) = (pp. 135-138).

Six new species are described.

17. *Gila conocephala*, B. and G., n. s. .... p. 125  
Rio San Joaquin, Cal.  
18. *Pogonichthys maculilobus*, B. and G., n. s. .... 126  
San Joaquin River, Cal.  
19. *Pogonichthys symmetricus*, B. and G., n. s.  
Fort Miller, Cal.  
20. *Lavinia exilicauda*, B. and G., n. s. .... 127  
Sacramento River, Cal.  
21. *Lavinia crassicauda*, B. and G., n. s.  
San Francisco, Rio San Joaquin, &c.  
22. *Leucosomus occidentalis*, B. and G., n. s.  
Pasa and Grove Creeks, Cal.

## 58.

1854. BAIRD, SPENCER F., and CHARLES GIRARD. Notice of a new genus of Cyprinidae. < *Proc. Acad. Nat. Sci. Phila.*, vii, 1854, p. 158.

- Cochlognathus*, B. and G., n. g. .... 158  
*Cochlognathus ornatus*, B. and G., n. s.  
Brownsville, Tex.

## 59.

1854. BAIRD, SPENCER F. Characteristics of some New Species of Mammalia, collected by the U. S. and Mexican Boundary Survey, Major W. H. Emory, U. S. A., Commissioner. Part I. < *Proc. Acad. Nat. Sci. Phila.*, vii, pp. 331-333. Read and ordered printed April 24, 1854.

The following eleven species are described:

- Sciurus limitis*, Baird, n. s. .... p. 334  
Devil's River, Texas.  
*Sciurus castaneotus*, Baird, n. s.  
Mimbres.  
*Tamias dorsalis*, Baird, n. s.  
On the Mimbres.  
*Spermophilus epilosoma*, Bennet.  
El Paso.  
*Spermophilus Couchii*, Baird, n. s.  
Santa Caterina, Mex.  
*Perognatus flavus*, Baird, n. s.  
El Paso.  
*Geomys Clarkii*, Baird, n. s.  
Presidio del Norte, on the Rio Grande.  
*Thomomys umbrinus* (Rich.), Baird.  
El Paso.  
*Sigmodon Berlanderi*, Baird, n. s. .... 335  
Between San Antonio and El Paso.  
*Neotoma mexicana*, Baird, n. s.  
Chihuahua.  
*Neotoma micropus*, Baird, n. s.  
Charco Escondido and Santa Rosalia, Mex.

## 60.

1854. BAIRD, SPENCER F. Characteristics of some New Species of North American Mammalia, collected chiefly in connection with the U. S. Surveys of a Railroad Route to the Pacific. Part I. < *Proc. Acad. Nat. Sci. Phila.*, vii, pp. 333-6. Read and ordered printed April 24, 1854.

Fifteen species are described, twelve of which are new.

- Lepus washingtoni*, Baird, n. s. .... 335  
Puget Sound and Shoalwater Bay.

## 1854. BAIRD, SPENCER F.—Continued.

- Lepus Treadbridgii*, Baird, n. s.  
Coast of California.
- Sciurus Buckleyi*, Baird, n. s.  
Puget Sound.
- Tamias Cooperi*, Baird, n. s. .... p. 334  
Cascade Mountains, Wash.
- Spermophilus Gunnisoni*, Baird, n. s.  
Cochitope Pass, Rocky Mountains.
- Spermophilus grammurus*, Say.  
Western Texas.
- Spermophilus Beecheyi*, Richardson.  
California.
- Dipodomys montanus*, Baird, n. s.  
Fort Massachusetts.
- Dipodomys agilis*, Gambel ..... 334-35  
San Diego, or Monterey.
- Geomys brevicauda*, Baird, n. s. .... 335  
Morehouse Parish, La.
- Thomomys bottae* (Egd. and Gerv.), Baird. B.  
Monterey.
- Thomomys rufescens*, Max.  
Fort Pierre.
- Thomomys laticauda*, Baird, n. s.  
Humboldt Bay.
- Neotoma occidentalis*, Cooper (ms.), n. s.  
Shoalwater Bay.
- Reithrodon montanus*, Baird, n. s.  
Rocky Mountains.
- Hesperomys Boylii*, Baird, n. s.  
American River, Cal.
- Hesperomys austerus*, Baird, n. s. .... 336  
Fort Steilacoom, Puget Sound.

## 61.

1855. BAIRD, SPENCER F. Report of the Assistant Secretary (of the Smithsonian Institution) for the year 1854. < *Ninth Annual Report Smithsonian Institution* (1854), 1855, pp. 31-46.

## 62.

1855. BAIRD, SPENCER F. Report on American Explorations in the years 1853 and 1854. < *Ninth Annual Report Smithsonian Institution* (1854), 1855, pp. 79-97.  
This series of reports was not separately made after this year, but the same material was incorporated in the regular reports of the Assistant Secretary.

## 63.

1855. BAIRD, SPENCER F. Report on the fishes observed on the coasts of New Jersey and Long Island during the summer of 1854, by Spencer F. Baird, Assistant Secretary of the Smithsonian Institution. < *Ninth Annual Report of the Smithsonian Institution* [for 1854], 1855, pp. 317-325 + \*337.

Reprinted as a pamphlet, with an index, and the following title:

Report | to | the Secretary of the Smithsonian Institution, | on the | Fishes of the New Jersey Coast, | as observed in the Summer of 1854, | by Spencer F. Baird, | Assistant Secretary S. I. | From the Ninth Annual Report of the Smithsonian Institution | for 1854. | — | Washington: | Beverly Tucker, Senate Printer, | June, 1855. | [8vo, 40 pp.]

68 species, of which 38 are marine, or brackish-water, and 10 fresh-water, were observed, and valuable notes on habits and color in a fresh state were recorded, during a period of six weeks spent on the coast of New Jersey, principally at Beesley's Point and Long Island, New York, and also on the Hudson River.

Notice > *Ninth Annual Report Smithsonian Institution* (1854), 1855, pp. 16-38.

"A period of six weeks spent on the coast of New Jersey, principally at Beesley's Point,

## 1855. BAIRD, SPENCER F.—Continued.

and Long Island, New York, furnished an opportunity of studying the habits and distribution of the principal species of fishes that are found on that portion of our shores during the summer.

"Although many others, doubtless, are to be found in the same region, yet none have been introduced except those which were actually caught and carefully examined. A considerable number of the species whose habits and peculiarities are given at some length, have hitherto had nothing placed on record concerning them; and it is hoped that the present article may be found to contain some interesting information, given here for the first time, in addition to its character as a contribution to our knowledge of the geographical distribution of species.

"The difference of the names applied to the same species of fish at various points of our coast, even when these happen to be connected very closely, both commercially and geographically, must strike every one with astonishment.

"It is scarcely too much to say that no one species of fish bears the same vernacular appellation from Maine to Maryland, still less to Florida or the coast of Texas. This is probably owing to the fact that our shores have been originally settled by various nations from widely remote parts of Europe, each introducing its peculiar nomenclature, or deriving names from the equally isolated aboriginal tribes with their various languages. Thus the names of blue-fish, white fish, perch, blackfish, bass, king-fish, porgee, hake, tailor, whiting, horse-mackerel, shad, smelt, dog-fish, &c., may apply equally to two or more very different species. Among the synonyms of the species will be found the vernacular equivalents in the regions visited, together with some from other localities. It will be sufficiently evident, therefore, that before any species referred to under a trivial name can be identified, the origin of the fish or that of the writer must be ascertained.

"Although most of the facts recorded in the following paper have reference to Great Egg Harbor, New Jersey, during a period extending from the middle of July to the end of August, it has been thought not unwise to incorporate the results of a visit to Brooklyn, Riverhead, and Greenport, Long Island, as well as to some points on the Hudson River, in September. Some valuable information was thus obtained, tending to illustrate more fully the natural history and distribution of the species found on the New Jersey coast.

"And here I take occasion to render an acknowledgment for much kind assistance and important information derived from various gentlemen at the different points of operation. Among these I will particularly mention Messrs. Samuel and Charles Ashmead, at Beesley's Point, who devoted all their time to the furtherance of my objects in this exploration. I may also mention Messrs. John Stites, Willis Godfrey, Washington Blackman, John Johnson, in fact, most of the residents of Beesley's Point. Much benefit was derived at Greenport, Long Island, from the companionship of Mr. E. D. Willard, of the National Hotel, Washington; while to Mr. J. Carson Breevort, of Bedford, Long Island, well known as the first ichthyologist in New York, and surpassed by no one in his knowledge of our marine species, I am under the greatest obligations. Through the kindness of Mr. John G. Bell, of New York, and Smith Herring, of Piermont, I was enabled to make a complete collection of the fishes of the Upper Hackensack and Spurrkill.

"It must be understood that the present article does not aim at giving a complete account of the species referred to. Such descriptions of color as have been given were in every case taken from the fresh and living fish, the object being to place on record features not usually preserved in alcoholic specimens. Of the species whose colors were known not to fade or alter in spirits, no notes of their peculiarities in this respect were taken, while the tints of others were so evanescent as to have escaped or altered before a description could be noted down.

"Very little respecting the habits or history of the species has been added from other authors, nor does the nomenclature profess to be at all final as to critical accuracy. To have accomplished this latter object, would have required more time than is at present at my disposal, involving, as it would, the entire revision of American ichthyology generally. The names given are principally those of De Kay in his history of the fishes of New York, and can thus be readily identified.

"As will be seen in the course of the article, several of the species collected appear new to science; to these I have been obliged to give names for the sake of proper reference, with out at the same time furnishing a complete scientific description.

"The coast of New Jersey is well known to consist, for most of its extent, of a low beach with sand-hills, separated from the mainland by a wide strip of low meadows filled with small ponds, and intersected by creeks and thoroughfares, which traverse it in every direction. There is no rock or stone of any description, and, consequently, there is a deficiency in the plants and animals which frequent rocky localities. At Beesley's Point there is scarcely a pebble of the smallest size to be seen.

## 1855. BAIRD, SPENCER F.—Continued.

"The meadows are densely coated with grass, and are covered with water only during unusually high tides.

"Beesley's Point is situated at the mouth of Egg Harbor river, where it empties into Great Egg Harbor bay. The water is, of course, salt at this point, though somewhat diluted by the volume of fresh water brought down by the river.

"The distance from the mouth of the river, or head of the bay, to the inlet on the beach, is about two or three miles; the extreme width about the same, although extending into thoroughfares, through which a boat may be taken to Absecon on the one side, and to Cape May on the other, without going outside of the beach. The mouth of the river is occupied by very extensive beds of oysters, which are celebrated for their excellent flavor. The bottom of the bay is in some part hard and shelly, in others sandy, or again, consists of a soft mud; the latter condition prevails near the shore, or wherever the current is of little strength.

"There are numerous mud-flats or sand-bars in the bay, some of them bare at low tide, or nearly so, and occupied by various species of water-fowl. These flats, continuing to increase in height, and at length acquire a growth of grass, which fixes still more the accumulating mud and sand, so that in time what was formerly a bar becomes an island elevated some feet above the water.

"This transition is, in fact, so rapid that many of the inhabitants now living have known islands several acres in extent to form within their own recollection.

"The greater part of the bottom of the bay and of the thoroughfares, generally, is a soft mud, rich in organic matter, and covered with a profuse growth of *Zostera marina* and algae of various species. Mr. Samuel Ashmead, who has been engaged for some years in studying the sea-weeds of our coast, has found a much greater variety of species at Beesley's Point than Professor Harvey allots to the New Jersey coast. The water being generally shallow except in the channels, the submarine vegetation can be seen to great advantage, while sailing over the surface. The water becomes very warm during the summer, and supplies all the conditions necessary for the development of young fishes of many species. The young of all the large fish of the bay may thus be found in greater or less numbers along or near the shore.

"The ponds in the meadows, like the waters of the bay itself, are generally muddy at the bottom, sometimes bare of vegetation, and sometimes covered with a thick growth. The fishes found in these ponds consist almost entirely of cyprinodonts of various species, with occasional specimens of *Atherina*, small mullets, or sticklebacks. The creeks likewise contain cyprinodonts, generally of different species from those of the ponds, with young fish of various kinds. Crabs and eels are found everywhere.

"The line of beach is two or three miles from the mainland, and consists of a clear white sand raised into hills ten to thirty feet high, a few hundred feet from the water's edge. It is in the inlets at the ends of these beaches that the greatest variety of fish is to be found, particularly in the small indentations, protected from the roughness of the waves, and the bottom of which is covered with *Ceramium* or sea-cabbage.

"Corson's inlet, frequently mentioned in the following pages, is situated at the southern end of Peck's beach, which begins directly opposite Beesley's point at the entrance to the harbor, and extends to this inlet over a distance of about five miles.

"The only fresh water near Beesley's point is Cedar Swamp creek. This stream, rising in a cedar swamp, and flowing with a very sluggish current, (the water of a chocolate color), is cut off from the tide by a dam at Littleworth, three miles from the point. The bottom is very muddy. But little variety of fresh-water fish is to be found in this stream. Several species of *Esox*, two *Leuciscus*, one eel, three *Pomotis*, one each of *Aphredoderus*, *Labrax*, *Etheostoma*, and *Melanura*, and several cyprinodonts. The species are nearly all different from those found in the interior of Pennsylvania on the same latitude.

"Another Cedar Swamp Creek occurs on the opposite side of Egg Harbor River, in Atlantic County. In many respects it differs from that first mentioned in being of more rapid current, and the bottom, at some distance from the tide-water dam, consisting of sand or small pebbles. The water, too, in small quantity is clear, though where of considerable depth it appears almost black. Fewer species of fish were found here than in the other, the only additional one being the *Catostomus tuberculatus*.

"Ludley's Run is a small run crossing the road to Cape May, about eight miles from Beesley's point; fresh at low tide, but flooded at high water. The only fish found in it consisted of two cyprinodonts and the *Gasterosteus quadricus*."

The following species are discussed. The figures in parenthesis refer to the pages of the separate edition:

1. <i>Labrax lineatus</i> , Cuv. and Val. ....	(7)	321
2. <i>Labrax mucronatus</i> , Cuv. and Val. ....	(8)	322
3. <i>Osmopristes nigricans</i> , Cuv. and Val. ....	(9)	323

## 1855. BAIRD, SPENCER F.—Continued.

4. *Pomotis obesus*, Girard..... (10) p.
5. *Pomotis chatodon*, n. s.  
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6. *Centrarchus pomotis*, n. s..... (11)  
Cedar Swamp Creek and in the Hackensack.
7. *Aphredoderus sayanus*, Lesueur..... (12)
8. *Sphyræna borealis*, De Kay.
9. *Prionotus pilatus*, Storer..... (13)
10. *Acanthocottus virginianus*, Girard..... (14)
11. *Boloesoma fusiformis*, Girard.
12. *Gasterosteus quadracus*, Mitch.
13. *Leiostomus obliquus*, De Kay..... (15)
14. *Otolithus regalis*, Cuv. and Val.
15. *Corvina argyroleuca*, Cuv. and Val..... (17)
16. *Umbrina alburnus*, Cuv. and Val.
17. *Pogonias fasciatus*, Lacep..... (18)
18. *Lobotes emarginatus*, R. and G., n. s.  
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19. *Pagrus argyrops*, Cuv. and Val..... (19)
20. *Eucinostomus*, B. and G., n. g..... (20)
21. *Eucinostomus argenteus*, B. and G., n. s..... (21)  
Egg Harbor River and small bays (August).
22. *Cybius maculatum*, Cuv. and Val.
23. *Lichia carolina*, De Kay.
24. *Lichia spinosa*, Baird..... (22)
25. *Caranx chrysus*, Cuv. and Val.
26. *Argyrosaurus capillaris*, De Kay..... (23)
27. *Temnodon saltator*, Cuv. and Val.
28. *Peprilus triacanthus*..... (24)
29. *Athermopsis notatus*, Girard.
30. *Mugil albula*, Linn..... (25)
31. *Gobius alpeidotes*, Bosc.
32. *Batrachus variegatus*, Les..... (26)
33. *Pseudogobius americana*, Cuv. and Val.
34. *Aillichthys marinus*, Baird and Girard..... (27)
35. *Leucostomus americanus*, Girard.
36. *Catostomus gibbosus*, Les.
37. *Melanura pygmaea*, Agass..... (28)
38. *Fundulus zebra*, De Kay.
39. *Fundulus diaphanus*, Agass..... (29)
40. *Fundulus multifasciatus*, Cuv..... (30)
41. *Hydrargyra flacula*, Storer.
42. *Hydrargyra lucia*, Baird, n. s.  
Ditch at Robinson's Landing, Peck's Beach, opp. Becale's Point.
43. *Cyprinodon orinus*, Val..... (31)
44. *Cyprinodon parvus*, Baird and Girard, n. s.  
Long Island, especially Greenport, New York.
45. *Esox fasciatus*, De Kay.
46. *Esox reticulatus*, Les..... (32)
47. *Belone truncata*, Les.
48. *Saurus mexicanus*, Cuv.
49. *Engraulis rittata* (Mitch.), Baird and Girard..... (33)
50. *Aloa menhaden*, Mitch.
51. *Aloa mallowana*, De Kay..... (35)
52. *Aloa terra*, De Kay.
53. *Chatoceus signifer*, De Kay.
54. *Platessa ocellaris*, De Kay.
55. *Platessa plana*, Storer.
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58. *Anguilla tenuirostris*, De Kay.
59. *Conger occidentalis*, De Kay..... (37)
60. *Ophidium marginatum*, De Kay.
61. *Syngnathus viridescens*, De Kay.

## 1855. BAIRD, SPENCER F.—Continued.

62. *Diodon maculato-striatus*, Mitch.  
 63. *Diodon fuliginosus*, De Kay.  
 64. *Tetraodon turgidus*, Mitch. .... (38) p. 352  
 65. *Carcharias caruleus*, De Kay.  
 66. *Mustelus canis*, De Kay. .... (39) 353  
 67. *Zygarna tiburo*, Val.  
 68. *Pastinaca hastata*, De Kay.  
 Index ..... (40)

## 64.

1855. BAIRD, S. F. Mammals [of Chili]. <Gillis, *Naval Astronomical Expedition*, ii, pp. 153-162.\*

Descriptions and synonymy of the following species, specimens of which were obtained by the expedition:

- Felis concolor*, L. .... p. 153  
*Canis magellanicus*, Gray ..... p. 154  
*Canis azaræ*, Max.  
*Galictis vittata*, Bell. .... p. 155  
*Dydelphys elegans*, Waterhouse.  
*Oavia australis*, Geoff. .... p. 156  
*Lagidium Cuvieri*, Wagn.  
*Spalacopus Poeppigii*, Wagl. .... p. 157  
*Myopotamus coypus*, Geoff.  
*Hesperomys*.  
*Chlamyphorus truncatus*, Harl. .... p. 158, pl. xi  
*Auchenia llama*, Deam ..... p. 159

## 65.

1855. BAIRD, SPENCER F. List of Mammalia found in Chili. <Gillis, *Naval Astron. Exp.*, ii, pp. 163-171.\*

This paper gives a full synonymy of each species, with a statement of geographical range and list of common names.

*Chiroptera*.*Insectivora*.

- Stenoderma chilensis*, Gay. .... p. 163  
*Desmodus D'Orbigny*, Waterh.  
*Dysopes nasutus*, Temm.  
*Nycticejus varius*, Schinz.  
*Nycticejus macrotis*, Fisch.  
*Vespertilio velatus*, Fisch.  
*Vespertilio chilensis*, Waterh.

*Rapacia*.*Carnivora*.*Felidae*.

- Felis concolor*, L. .... 164  
*Felis pajeros*, Deam  
*Felis guigna*, Mol.  
*Felis colocolo*, Mol.

*Canidae*.

- Canis fulvipes*, Martin.  
*Canis magellanicus*, Gray.  
*Canis azaræ*, Max.

*Mustelidae*.*A. Martinea*.

- Galictis vittata*, Bell. .... 165

\* 23d Congress. } House of Representatives. { Ex. Doc. | — | The | U. S. Naval Astronom-  
 1st Session. } No. 121. | — | | | |  
 | Expedition | to | the Southern Hemisphere, | during | the years 1849-'50-'51-'52. | — |  
 | Lieut. J. M. Gillis, Superintendent. | — | Volume II. | — | Washington: | A. O. P. Nicholson,  
 Printer. | MDCCCLV.



## 1855. BAIRD, SPENCER F.—Continued.

B. *Molinae*.

- Mephitis chilensis*, —.  
*Mephitis patagonica*, Licht.  
*Mephitis molinae*, Licht.

C. *Lutrine*.

- Lutra felina* (Molina), Gay.  
*Lutra Audubonia*, Gay.

*Pinipedia*.*Phocida*.

- Otaria porcina* (Molina), Desm. ....  
*Otaria jubata* (Schreb.), Desm.  
*Otaria flavescens* (Shaw), Desm.  
*Otaria ursina* (Linn.), Desm.  
*Stenorhynchus leptonyx* (Blainv.), F. Cuv.  
*Macrorhinus leoninus* (Linn.), F. Cuv.

*Marsupialia*.

- Dydeiphys elegans*, Waterh.

*Rodentia* .....*Hystricida*.*Caviinae*.

- Cavia australis*, Is. Geoff.

*Chinchillinae*.

- Lagidium Ouvieri* (Benn.), Wagn.  
*Lagidium criniger* (Gay), R.  
*Lagidium pallipes* (Bennet), Wagner.  
*Chinchilla lanigera* (Molina), Benn.

*Octodontinae*.

- Habrocoma Bennetti*, Waterh. ....  
*Habrocoma Ouvieri*, Waterh.  
*Octodon degus* (Molina), Waterh.  
*Octodon Birdgerii*, Waterh.  
*Schizodon fuscus*, Waterh.  
*Spalacopus Pasppigii*, Wagler.  
*Otenomys magellanicus*, Benn.

*Echymyinae*.

- Myopotamus coypus* (Molina), Commers .....

*Murida*.*Murina*.

- Oryzomys scalops*, Gay.  
*Oryzomys mygalonyx* (Waterh.), Gay.  
*Hesperomys longipis*, Waterh.  
*Hesperomys rengerii*, Waterh.  
*Hesperomys brachyotis*, Waterh.  
*Hesperomys rupestris*, —.  
*Hesperomys xanthorhinus*, Waterh.  
*Hesperomys Darwinii*, Waterh.  
*Hesperomys leucocoma*, Gay .....

- Hesperomys longicaudatus* (Bennett), Waterh.  
*Reithrodon chinchilloides*, Waterh.

*Edentata*.*Efodientia*.

- Dasyppus minutus*, Desm.  
*Chlamyphorus truncatus*, Harl.

*Ruminantia*.*Camelida*.

- Auchenia llama* (Waterh.), Desm.

*Cervida*.

- Cervus pudu*, Gerv. ....  
*Cervus chilensis*, Gay and Gervais.

*Cetacea*.*Delphinida*.

- Delphinus lunatus*, Less.  
*Delphinus albimanus*, Peale.

## 1855. BAIRD, SPENCER F.—Continued.

*Physteridae.**Physter macrocephalus*, L.*Balanidae.**Balana antarctica*, Klein.

## 66.

1855. BAIRD, SPENCER F. [Report to Capt. John Pope on the zoological collection made by his party of the Pacific R. R. Survey between El Paso and Fort Smith.] Dated Washington, Oct. 1, 1854. < *Pope's Report of Exploration of Route for P. R. R. near 32d Parallel.* [H. Doc. 129.] 1855(†), p. 129.

## 67.

1856. BAIRD, SPENCER F. List of Fishes inhabiting the State of New York: Sent to the New York State Cabinet of Natural History by the Smithsonian Institution in May, 1855 (by Professor S. F. Baird). < *Ninth Annual Report of the Regents of the University of the State of New York on the Condition of the State Cabinet of Natural History and the Historical and Antiquarian Collection annexed thereto.* \* \* \* 1856, pp. 22-29.

A list of 70 species with partial synonymy, corresponding closely with the list given in the paper on the fishes of the New Jersey coast.

## 68.

1856. BAIRD, SPENCER F. [Report of the Assistant Secretary of the Smithsonian Institution for the year 1855.] < *Tenth Ann. Rep. Smithsonian Institution* (1855), 1856, pp. 36-61.

Principal desiderata of this museum ..... 54, 55  
 Premiums for collections ..... 55, 56

## 69.

1856. BAIRD, SPENCER F. Report of Professor S. F. Baird, late Permanent Secretary of the American Association for the Advancement of Science, on the Distribution and Disposal of the Volumes of Proceedings. < *Proc. Amer. Assoc. Adv. Science*, ix, 1855, pp. 287-292.

## 70.

1856. BAIRD, SPENCER F. [A description of the genus *Ceratichthys*.] < *Proc. Acad. Nat. Sci. Phila.*, viii, 1856, p. 212.

## 71.

1857. BAIRD, SPENCER F. [Report of the Assistant Secretary of the Smithsonian Institution for the year 1856.] < *Eleventh Ann. Rep. Smithsonian Institution for the year 1856, 1857*, pp. 47-68.

## 72.

1857. BAIRD, SPENCER F. [Name *Tamias pallasii* proposed instead of *Solurus striatus*, Pallas, nec Linn.] < *Eleventh Ann. Rep. Smithsonian Institution*, 1857, p. 55.

## 73.

1857. BAIRD, SPENCER F. Directions for collecting, preserving, and transporting specimens of natural history. Prepared for the use of the Smithsonian Institution. < *Eleventh Ann. Rep. Smithsonian Institution* (1856), 1857, pp. 235-253.

## 74.

1857. BAIRD, SPENCER F. American Oology. < *Edinb. New Philos. Journal*, new ser., v, 1857, p. 374.

Extract from a letter relating to T. M. Brewer's work.

## 75.

1857. BAIRD, SPENCER F. Catalogue | of | North American Mammals, | chiefly in the Museum of the | Smithsonian Institution. | By | Spencer F. Baird, | Assistant Secretary of the Smithsonian Institution. | — | Washington : | Smithsonian Institution, | July, 1857. | 4to. pp. 21.

This catalogue is essentially the systematic list which forms the first twenty-one pages of the General Report on North American Mammals published the same year.

A large edition of this check-list catalogue was printed, and it remains to the present time the only check-list and the principal standard of authority for labeling collections.

## 76.

1857. BAIRD, SPENCER F. Explorations and surveys for a railroad route from the Mississippi River to the Pacific Ocean. | War Department. | — | Mammals : | By Spencer F. Baird, | Assistant Secretary of the Smithsonian Institution. | — | Washington, D. C., 1857. < <sup>33d Congress,</sup> } House of Representatives.  
 { Ex. Doc. } 2d Session. }  
 { No. 91. } — | Reports | of | explorations and surveys, | to | ascertain the most practicable and economical route for a railroad | from the | Mississippi River to the Pacific Ocean. | Made under the direction of the Secretary of War, in | 1853-6, | according to acts of Congress of March 3, 1853, May 31, 1854, and August 5, 1854. | — | Volume VIII. | — | Washington : | \*A. O. P. Nicholson, Printer. | 1857. 4to. pp. xlviii, 757, pl. xviii-lx. †

The special title-page quoted above is on page xxi.

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Dated Washington July 20, 1857.

"It is a systematic account of the mammals (exclusive of *Cetacea*, *Chiroptera*, *Sirenia*, and *Pinipedia*) of North America, about 220 in number, and is by far the most important and most authoritative treatise which has ever appeared on the subject." (GILL and COUES.)

Review.—*Annals and Magazine of Natural History*, May, ser. 3, vol. i, 1858, pp. 369-373, reprinted in *American Journal Science and Arts*, xxvi, 1858, pp. 141-146.

The following description of the work is taken from the preface:

"The present report is intended to embrace a systematic account of all the species of North American mammals collected or observed by the different parties organized under the direction of the War Department for ascertaining the best route for a railroad from the Mississippi River to the Pacific Ocean. It was originally proposed to furnish a separate report in detail on the collections of each party, but a consideration of the fact, that, with scarcely an exception, almost every species was found on two or more lines of survey, and thus not peculiar to any one expedition, led to an abandonment of the first intention. It was considered to be worse than useless to repeat the same descriptions and details over and over again, while, at the same time, under the circumstances, it would have been difficult to say in what report any particular article could be best placed. As too, the interest of North American zoology depends not merely on the character of the species, but also on their generic and family affinities, as well as on their relationships to latitude and longitude, climate, soil, elevation, &c., it would have been impossible to do justice to the subject by cutting up the

\* Other copies have the imprint of Beverly Tucker.

† In Gill and Coues's "Material for a Bibliography of North American Mammals," pp. 593, this edition is cited as containing plates i-ix, which is erroneous, the first 17 plates being given in other volumes of this series of reports.

## 1857. BAIRD, SPENCER F.—Continued.

report into several isolated portions without any special connection as parts of a systematic whole.

"At the same time, however, as it was desirable to present a picture of the zoological character of the several routes, as well as to show what each party accomplished, and, as many very important notes of habits and local peculiarities were made by the naturalists of the different lines, it would have been clearly an act of injustice to these gentlemen as well as to their chief officers to merge all their results into one common report. For these and other reasons it was finally determined that there should be prepared one general report on the entire collections of the railroad surveys, to consist solely of the technical description of the families, genera, and species, and of such remarks as might be necessary to show their place in the systems, each species to be preceded by its synonymy, and followed by an enumeration of all the specimens collected, so arranged in tables as to show their geographical distribution.

"In addition to this general report, however, special reports by the naturalists of each line were also to be prepared and published, to embrace the systematic and vernacular names of their species, with a list of the specimens collected. To these special reports, were to be confined all the biographies of the animals seen, all notices of their habits, peculiarities, and distribution, as observed and recorded during the route. In order that there might be no misconception of the species referred to, it was concluded to give a short diagnosis of each, with a reference to the page of the general report where the purely zoological details might be found more at length.

"The present report, therefore, is the first of the series of general reports referred to, to be followed, as soon as practicable, by the remainder of the Vertebrata. The special reports on the zoology of each line of survey will be found in connection with the other reports belonging to their respective parties, in their full notices of the life of our western animals, possess a general and popular interest far greater than can attach to the present account of mere zoological and technical details.

"The large size of this report on the mammals collected by the railroad parties is owing to several causes. In the first place, the amount of new or little known material obtained was extraordinarily great. The summary of the species, at the beginning of the systematic list hereafter presented, will show that very many entirely undescribed animals were procured, and that, of a large number of others, previously little known, the specimens were sufficient to furnish many new and interesting details of characters, both external and internal.

"As, too, the object in calling for complete reports from the several parties was not merely to show the actual results of the several expeditions, but likewise to ascertain the general character of the Western Territories, I have not hesitated to include in this work all such materials derived from officers stationed at military posts, and other persons elsewhere in the West, as fell under my notice.

"In view of the large amount of new or little known species at hand, in the preparation of the present report, sometimes embracing entire genera and even families, it soon became evident that none of the published descriptions of the old and standard species were sufficiently minute and detailed to furnish the necessary means of comparison. With the discovery of forms very closely allied to or intermediate between those already known, the descriptions of the latter on record did not show sufficiently in what the differences consisted. It became necessary, therefore, to redescribe, as far as they could be procured, all such species, which, in fact, proved finally to be nearly all previously known. The present monograph of American mammals has, in the end, grown out of the necessities referred to.

"It will be sufficiently evident that, without the extraordinarily rich and full collection of North American mammals belonging to the Smithsonian Institution, the monographs and comparisons of species, in the present report, could not have been prepared. Independently of the specimens brought in by the Pacific Railroad surveying parties, the series in its Museum, from other sources, was found to embrace nearly all the previously known species, and many entirely new ones.

"I have also made free use of the collections and library of the Philadelphia Academy of Natural Sciences, for which every facility has been furnished in its hall. The examination of the specimens collected by Townsend, and described by Dr. Bachman, has contributed to settle some quite doubtful points, while in some rare or very costly works of its unequalled natural history library I have been enabled to verify many references which would otherwise have remained uncertain.

"I regret not to have been able to examine any of the types of the new species of Audubon and Bachman, as presented by the latter gentleman to the Charleston Museum. The rules of that establishment do not permit specimens to leave its hall, and it was not possible to visit it during the preparation of this report.

"I have endeavored to make all acknowledgments of aid from systematic writers in the body of the report, although it may be well to mention here that much use has been made

## 1857. BAIRD, SPENCER F.—Continued.

throughout of the works and articles of Wagner, Waterhouse, Gray, Brandt, Burmeister, Keyserling and Blasius, Giebel, Richardson, Agassiz, Englemann, and others, as enumerated in the synonymy and list of authorities. To the labors of Messrs. Audubon and Bachman, however, either singly or collectively, are acknowledgments especially due for what ever facilities may have previously existed for the preparation of a report on American mammals. The necessity or propriety of such a report is only to be found in the fact that, when the crowning work of these gentlemen, 'The Viviparous Quadrupeds of North America,' was prepared, the materials at their command were far less extensive than have been at mine, and that many species, which they could only examine in the museums of London, Paris, Berlin, and Leyden, are now to be found in the Smithsonian collection in a profusion of specimens of the most satisfactory and perfect character.

"An apology is necessary for the delay which has taken place in the completion of the general reports on the zoology of the Pacific Railroad surveying parties. This has arisen from the fact that, from the first organization of these expeditions, in the spring of 1853 nearly to the present time, one or more has been in the field, and engaged in fresh examinations; so that until all the specimens expected were received, the general systematic account of zoological results could not conveniently be prepared. The examination of the material was actually commenced early in 1855, and many of the articles written in that year in 1856. With the continuous accession of additional specimens, it became finally necessary to re-write, alter, or extend all that had been prepared prior to the present year (1857). It is to this that the frequent want of uniformity is due, the time allowed not being sufficient in many cases to permit the reworking of the whole matter. The measurements of the specimens were at first made in inches and lines, but that of hundredths was finally adopted; it is to this fact that the presence of the two different divisions of the inch is attributable, it not being convenient or possible to make the measurements conform throughout, as would have been desirable.

"It is, perhaps, unnecessary to state that the matter of the present report is entirely original throughout, the few cases in which extracts from other authors are made being so indicated. With very few exceptions, all the references in the synonymy have also been personally made and verified. Where this was not possible, the synonymy is inclosed between quotation marks.

"In explanation of the too frequent occurrence of typographical errata in the body of this report, it is proper to state that, owing to various circumstances, the work was necessarily passed through the press with a rapidity probably unexampled in the history of natural-history printing, allowing very little opportunity for that critical and leisurely examination necessary in correcting a work of the kind. For most of the time the proof has been furnished and read at the rate of twenty-four to thirty-two pages per day, nearly four hundred pages having been set up, read, and printed during the first half of July alone. The same cause has also interfered with the preservation of perfect uniformity of arrangement and detail throughout. In some cases, accidents to the form while on press have caused the loss or transposition of letters, words, or paragraphs; as, among others, the exchange of characters of Order VIII and IX, on page 1, referred also to on page 625. For excuse of errors in the use of technical terms, in the formation and inflection of scientific names, and for all other shortcomings, the writer can only throw himself upon the kind indulgence of his readers, partly in consideration of the fact that, owing to the urgent necessity for a speedy completion of the volume, no time was allowed for any revision of the manuscript as a complete work, no indeed, of its separate portions, and that for much of the time the preparation of much of the manuscript was only a few hours in advance of its delivery to the compositor.

"A few words in explanation of the plan adopted in preparing the articles of the present report may not be out of place. I have usually made the entire detailed description of the species from one particular specimen, often indicating it by number, mentioning afterward the variations presented from this type by the others later met. The specific diagnosis alone contains a combination or selection from the characters of several specimens. The numbers attached to the specimens, as enumerated, are those which they bear in the Smithsonian Museum Catalogues. Each class of animals has its separate catalogue and succession of numbers, from 1 upwards, in this series, the same number being never used twice for different objects in its class, and thus constituting an essential part of the specimen. There is also a special catalogue of the osteological collections. Thus, the skin of a mammal will have one number, and its skull, if separated, another; each specimen having both numbers attached to its own as numerator of a fraction. Thus, when a skull is labeled or entered <sup>421</sup> 1149 it is to be understood that 421 is its number as entered in the catalogue of skins, or entire specimens in alcohol, while 1149 is the number of the skull as entered in the osteological catalogue. The skull itself would in this case be marked <sup>1149</sup> 421.

## 183. BAIRD, SPENCER F.—Continued.

"The column of 'original numbers' embraces those attached to specimens in the field by collectors. These are always retained as being referred to in the field-notes of the different parties.

"The measurements have, in all cases, been made in English inches,\* divided either into lines or twelfths or into one-hundredths. All the skulls, and in most cases the smaller skins, have been measured with dividers or callipers. The measurements of the body have been made to the insertion of the tail into the rump, or nearly to the very base of the caudal vertebra: the animal usually with the head, body, and tail extended into the same straight line, avoiding, as far as possible, all curvature.

"Where measurements are recorded as made before skinning, they are, in most cases, to be understood as having been furnished by the collector.

"For the sake of illustrating more fully the character of the species described in the present report, I have prepared the three lists as follows:

"The first list is that of the higher groups characterized in the following pages.

"The second list contains all the species of mammals, found in North America north of Mexico, that I have had an opportunity of examining while preparing the present work, together with a few that belong to the northern provinces of the last-mentioned State. These are inserted as very probably existing within the limits of the United States, even though not yet detected. The indications of geographical distribution are chiefly those furnished by the specimens before me, although I have occasionally given statements in this respect from Audubon, Bachman, and Richardson. I have not pretended to define with critical accuracy the complete range of the species, the facts on record not being sufficient for the purpose.

"The third list embraces the species which have not fallen under my notice. Some of these have little claim to a place in the fauna of North America north of Mexico, while others are, in all probability, the same as those mentioned in the first list. A few are unquestionably additional and good species, especially such as *Sorex ambriceps* and *palustris*, *Putorius nigripes*, *Arctomys prainosus*, *Thomomys talpoides*, *Arvicola borealis*, *drummondii*, *richardsonii*, and *zanthognathus*, and some others.

"The following table will serve to indicate the additions in the list to the known species of North American mammals, as compared with the latest general work on the subject:

Species described here as new for the first time .....	35
Species described in 1853, from the same collection .....	17
<hr/>	
Total of new species in the Smithsonian collection not mentioned by Audubon and Bachman .....	52
Recognized species previously described, not mentioned by Audubon and Bachman .....	18
<hr/>	
Total of North American species additional to the list of Audubon and Bachman ..	70

"The entire number of species mentioned by Audubon and Bachman in the Quadrupeds of North America, exclusive of varieties, is 197, of which about 100 were figured, the remainder consisting either of species previously described by the authors, but not procurable for purposes of illustration, or else copied from others, to render their work complete,

"The total number of species of North American mammals represented in the Smithsonian collection is very nearly 220. Washington, D. C., July 20, 1857." < *Extracts from (Preface) Exploration and Survey for the Pacific R. R.*, vol. viii, 1853-6, pp. xxv, xxvi, xxvii, xxviii, and xxix.

## "GENERAL SKETCH OF LINES EXPLORED.

"Shortly before the close of the session of Congress in March, 1853, an appropriation of \$150,000 was made to defray the expenses of the survey of the various routes along which it was supposed that a railroad might be constructed from the Mississippi River to the Pacific Ocean. For this purpose six parties were organized by the War Department for the survey of four main routes, and in a short space of time they were in the field. All the parties were fitted out in the most complete manner; the natural-history apparatus and material prepared under the direction of the Smithsonian Institution, which also furnished the necessary instructions as to the objects most important to be collected. In its efforts to secure the assignment to these parties of persons capable of making collections and observations it was met by the hearty co-operation of the War Department, through the heads of the different expeditions and Captain Humphreys, in charge of the Pacific Railroad office.

"A more detailed account of the collections and expeditions referred to above will be found in the Reports of the Smithsonian Institution—(sixth to the eleventh, 1851-1856). A notice

\* The English inch used is about equal to 11.26 French lines, .9383 French inches, or to 25.40 millimeters. On the other hand, the French inch is equal to 1.0657 English inches, the French line to .0888 English inches, and the millimeter to .03937 English inches. The French meter is equivalent to 39.37 English inches, or 3.28 feet.

## 1857. BAIRD, SPENCER F.—Continued.

of the collections from the eastern portions of the United States, used for purposes of comparison, will also be found in the same series.

"The very rich collections made by the United States and Mexican Boundary Survey in Texas, New Mexico, and California are described in detail in its report, which also embraces notices of the results of the explorations in Texas and Northern Mexico by Dr. Berlandier, Mr. John Potts, Major Rich, and Lieut. Couch. Incidental mention of these is also made occasionally in the present volume, wherever necessary to complete the indications of geographical distribution.

"The collections of all the government parties just mentioned were transmitted, from time to time, to the Smithsonian Institution, and were there properly cared for until the return of the several expeditions. They were then placed in the hands of the naturalists selected to elaborate them, and the necessary drawings prepared, within its walls, under the direction of the Institution, to which, also, was committed the general supervision of the engraving and printing of the plates. Every facility has been furnished by the War Department, through Captain Humphreys, in charge of the Pacific Railroad office, and the heads of the different expeditions, for bringing the results properly before the world." < *Extracts from Introduction, Exploration and Surveys for the Pacific Railroad*, vol. viii, 1853-8, parts of pp. xiii, xvi, and xvii.

The definitions of the higher groups are inserted in their proper places, and it is not thought necessary to index them.

## A.—List of examined and identified species of North American Mammals.

## 1. NEOSOREX, BAIRD.

1. *Neosorex navigator*, Cooper, n. s. .... pl. xxvi p. 11

## 2. SOREX, L.

2. *Sorex Troubridgii*, Baird, n. s. .... pl. xxvi 12  
 3. *Sorex vagrans*, Cooper, n. s. .... pl. xviii, figs. 5 and 6; pl. xxvi 15  
 4. *Sorex Suckleyi*, Baird, n. s. .... pl. xxvii 18  
 5. *Sorex pachyurus*, Baird, n. s. .... pl. xxvii 20  
 6. *Sorex Forsteri*, Rich ..... pl. xxx, fig. 4 22  
 7. *Sorex Richardsoni*, Bachm. .... 24  
 8. *Sorex platyrhinus*, Wagner. .... pl. xxviii 25  
 9. *Sorex Cooperi*, Bach ..... pl. xxvi 27  
 10. *Sorex Haydeni*, Baird, n. s. .... pl. xxvii 29  
 11. *Sorex personatus*, Geoff. .... 30  
 12. *Sorex Hoyi*, Baird, n. s. .... pl. xxviii 32  
 13. *Sorex Thompsoni*, Baird, n. s. .... pl. xxvii 34

## 3. BLARINA, GRAY.

14. *Blarina talpoides*, Gray ..... pl. xviii, xxx 36  
 15. *Blarina brevicauda*, Gray ..... pl. xxx 42  
 16. *Blarina carolinensis* ..... pl. xxx 45  
 17. *Blarina angusticeps*, Baird, n. s. .... pl. xxx 47  
 18. *Blarina cinerea* ..... pl. xxx 45  
 19. *Blarina exilis*, Baird, n. s. .... pl. xxviii 51  
 20. *Blarina berlandieri*, Baird, n. s. .... pl. xxviii 53

## 4. SCALOPS, CUV.

## a. SCALOPS.

21. *Scalops aquaticus*, Cuv ..... pl. xvii, fig. 1 60  
 22. *Scalops argentatus*, Aud. and Bach ..... 63

## b. SCAPANUS, POMEI.

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*Scalops Townsendii* var. *californicus* ..... pl. xvii, xxx  
 24. *Scalops Breweri*, Bach ..... pl. xvii, xxx 68  
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25. *Condylura cristata*, Ill. .... pl. xviii, figg. 1, 2 71

## 6. UROTRICHUS, TEMM.

26. *Urotrichus Gibbetti*, Baird, n. s. .... pl. xviii, fig. 3; pl. xxviii 76

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7. FELIS, L.		
27. <i>Felis concolor</i> , L.	pl. ii, fig. 2	p. 83
28. <i>Felis onca</i> , L.		86
29. <i>Felis pardalis</i> , Linn.		87
30. <i>Felis cyra</i> , Desmarest.		88
31. <i>Felis yaguarundi</i> , Desmarest.		88
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## 9. CANIS, L.

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## 13. PUTORIUS, L.

7. *Putorius nigripes*, Aud. and Bach. ....

## 17. MEPHITIS, LIGHT.

8. *Mephitis mesomelas*, Licht. ....

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## 19. PROCYON, STORR.

9. *Procyon psora*, Gray. ....

## 22. SCIURUS, L.

10. *Sciurus colliaei*, Rich. ....
11. *Sciurus mustelinus*, Aud. and Bach. ....
12. *Sciurus nigrescens*, Bennett. ....
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## 33. DIPODOMYS, GRAY.

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## 37. REITHRODON, WATERH.

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## 77.

1367. BAIRD, SPENCER F. Catalogues of Fishes, copied from a "Report on the Fishes observed on the Coasts of New Jersey and Long Island during the summer of 1854. By Spencer F. Baird, Assistant Secretary of the Smithsonian Institution." From the Ninth Annual Report of the Smithsonian Institution for 1854. < *Catalogue of Zoological and Botanical Productions of the County of Cape May, in Geology of the County of Cape May, State of New Jersey*, 1857. pp. 146-148.

A name catalogue only, the scope of which is explained by its title.

## 78.

1368. BAIRD, SPENCER F. Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Ocean. | War Department. | — | Birds: | By Spencer F. Baird, | Assistant Secretary Smithsonian Institution, | with the co-operation of | John Cassin and George N. Lawrence. | — | Washington, D. C. | 1858. pp. i-lvi, 1-1005. (No illustrations.) Dated Washington, Oct. 20, 1853. < 33d Congress, } Ex. Doc. {  
2d Session. } House of Representatives. { No. 91. | — | Reports | of | Explorations and Surveys, | to | ascertain the most practicable and economical route for a railroad | from the | Mississippi River to the Pacific Ocean. | Made under the direction of the Secretary of War, in | 1853-6, | according to acts of Congress of March 3, 1853, May 31, 1854, and August 5, 1854. | — | Volume IX. | — | Washington: | A. O. P. Nicholson, Printer. | 1858. 4to, pp. lvi, 1005.

"This report is complete in itself, and entirely independent of the various special articles by different naturalists of the several Surveys; an elaborate formal treatise on all the birds of North America north of Mexico. It represents the most important single step ever taken in the progress of American ornithology in all that relates to the technicalities. The nomenclature is entirely remodeled from that of the immediately preceding Audubonian period, and for the first time brought abreast of the then existing aspect of the case. It was adopted by the Smithsonian Institution, and thousands of separately printed (4to and 8vo) copies of the 'List of Species' were distributed during succeeding years to institutions and individuals; the names came at once into almost universal employ, and so continued, with scarcely appreciably diminished force, until about 1872. The synonymy of the work is more extensive and elaborate and reliable than any before presented. The compilation was almost entirely original, very few citations having been made at second-hand, and these being indicated by quotation-marks. The general text consists of diagnoses or descriptions of each species, with extended and elaborate criticisms, comparisons, and commentary. Of the general character of the specific determinations, it may be said that the author's tendency was to push specific discriminations beyond a point now usual; so that, though the work contains notably few purely nominal species, it has many that have proven to be simply geographical races. Tabular lists of the specimens examined, with localities where procured, collector, date of collection, and many measurements, are given. The work includes no biographical matter, nor is it illustrated.

"The appearance of so great a work, from the hands of a most methodical, learned, and sagacious naturalist, aided by two of the leading ornithologists of America, exerted an influence perhaps stronger and more widely felt than that of any of its predecessors, Audubon's and Wilson's not excepted, and marked an epoch in the history of American ornithology.

## 1858. BAIRD, SPENCER F.—Continued.

The synonymy and specific characters, original in this work, have been used again and again by subsequent writers, with various modifications and abridgment, and are in fact a large basis of the technical portion of the subsequent *History of North American Birds* by Baird, Brewer, and Ridgway. Such a monument of original research is like to remain for an indefinite period a source of inspiration to lesser writers, while its authority as a work of reference will always endure."—ELLOT COUES.

The following extract from the preface explains the scope of this work:

"The present report is a continuation of a systematic account of the vertebrate animals of North America, collected or observed by the different parties organized under the direction of the War Department for ascertaining the best route for a railroad from the Mississippi River to the Pacific Ocean.

"The collections of these expeditions having been deposited with the Smithsonian Institution by the War Department, in compliance with an act of Congress, the undersigned was charged by the Secretary of the Institution with the duty of furnishing the series of general reports upon them, as called for by the department. The account of the Mammals have been published in 1857, that of the Birds is herewith furnished, prepared according to the plan announced in the preface to that volume."

"As in the volume on the Mammals, by the insertion of the comparatively few species noticed by the expeditions, this report becomes an exposition of the present state of knowledge of the Birds of North America, north of Mexico. This addition, while rendering the work more valuable to the reader, was absolutely necessary for the proper understanding of the Western Fauna, the species of which are generally so closely allied to the Eastern forms as to require in most cases more minute and detailed descriptions of the latter than have been published."

"Certain portions of the report have been prepared by Mr. John Cassin, of Philadelphia and Mr. George N. Lawrence, of New York, well known as the leading ornithologists of the United States. Mr. Cassin has furnished the entire account of the *Raptores*, from p. 4 to 101, of the *Grallae*, from p. 689 to 753, and of the *Alcidae*, from p. 900 to 918, in all about 135 pages. Mr. Lawrence has written the article on the *Longipennes*, *Totipalmes*, and *Olymbidae*, from p. 820 to 900, making 80 pages."

"To Mr. P. L. Slater, of London, acknowledgments are due for the examination of certain specimens in European museums, and for other valuable aid in determining points of synonymy; some of his notes received too late for insertion in their proper places will be found in Appendix A. Much assistance has also been rendered in various ways by Dr. J. Cooper."

"In the introduction to the general report upon the Mammals will be found a detailed account of the different railroad surveying parties from which Zoological collections were received, with their respective routes." \* \* \*

"A collection of about 150 species received from Mr. John Gould, of London, containing many rare birds from the Northwest and Arctic regions (some of them types of the 'Fauna Boreali-Americana'), as well as others from Mexico and Guatemala. The latter have proved of great service for comparison with closely allied species of the United States, as have also specimens from Mr. P. L. Slater, of London, Mr. J. P. Verreaux, of Paris, and Messrs. J. Gurney and Alfred Newton, of Norwich, England."

"The types of Eastern birds have been furnished by the collection of the author deposited in the Smithsonian Institution. This consists of a full collection of birds of Central Pennsylvania, with sex, date, and measurements before skinning. It also embraces a large number of Mr. Audubon's typical specimens used in the preparation of his 'Birds of America,' including many of those from the Columbia River and Rocky Mountains, furnished him by Mr. J. K. Townsend."

"In addition to the collections just mentioned, with others not enumerated, all in charge of the Smithsonian Institution, and amounting to over 12,000 specimens, types have been supplied for the occasion by Mr. Cassin, Mr. Lawrence, Mr. John G. Bell, Dr. Michener, and others. The ornithological gallery of the Philadelphia Academy of Natural Sciences, believed to be the richest in the world, has also furnished the means of making many essential comparisons."

"The measurements of the specimens have usually been made in hundredths of the English inch,\* mostly with the dividers. All the measurements in the list of specimens are made before the bird was skinned, each collector being responsible for the accuracy of the work. The comparative tables of measurements show, in many cases, the change of dimensions produced in the dried skin."

"S. F. B.

"WASHINGTON, October 30, 1853."

< Preface, *Expl. and Surv. for the Pacific Railroad*, vol. ix, 1853-'56, pp. xiii and xv, xvi.

1863. BAIRD, SPENCER F.—Continued.

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The following birds are enumerated in the preceding list which are not legitimately entitled to a place in the fauna of North America (exclusive of Mexico). Some of them have been described in the report for the purpose of comparison with closely-allied species of the United States; others are mentioned because introduced by previous writers, though probably on erroneous data. Future investigations will doubtless result in the removal of others from the list now retained there:

- No. 4. *Oathartes burrovianus*, Cassin.
- 63. *Rhynchopsitta pachyrhyncha*, Bon.
- 71. \**Campephilus imperialis*, Gray.
- 129. \**Tyrannus melancholicus*, Vieill.
- 132. *Myiarchus Cooperi*, Baird.
- 171. \**Geothlypis velatus*, Cab.
- 216. *Cardellina rubra*, Bonap.
- 219. *Setophaga miniata*, Sw.
- 224. *Euphonia elegantissima*, Gray.

## MR. BAIRD, SPENCER F.—Continued.

244. \* *Vireo virescens*, Vieill.<sup>1</sup>  
 292. *Parus meridionalis*, Solater.  
 297. *Psaltriparus melanotus*, Bon.  
 298. *Carpodacus hamorrhous*, Solater.  
 311. \* *Chrysomitris Stanleyi*, Bonap.  
 312. \* *Chrysomitris Yarrelli*, Bonap.  
 350. *Junco cinereus*, Solater.  
 405. *Trupialis militaris*, Bon.  
 406. \* *Icterus vulgaris*, Daud.<sup>1</sup>  
 410. *Icterus melanocephalus*, Gray.  
 494. *Butorides Brunnescens*, Baird.  
 498. \* *Ibis rubra*, L.<sup>1</sup>  
 514. \* *Haematopus ater*, Vieill.

Total of species, 23; of which one is not mentioned in the list, leaving 22. Of the 23 species, nine marked with an asterisk are given by Mr. Audubon.

The following species, claiming to be actually inhabitants of North America, have not been described from the specimens, none having been procurable for the purpose. Of several of them no specimens are known in any collection:

*Heliaeetus Washingtonii*.  
*Regulus Cuvierii*.  
*Dendroica montana*.  
*carbonata*.  
*Myiodytes minutus*.  
*Bonapartii*.  
*Egithus canescens*.  
*Leucosticte griseinucha*.  
*arctica*.  
*Lagopus americanus*.  
*Chloephaga canagica*.  
*Polysticta Stelleri*.<sup>1</sup>  
*Oidemia bimaculata*.  
*Somateria v-nigra*.  
*Graculus perisotillatus*.  
*cinnamatus*.

*Thalassidroma Hornbyi*.  
*melania*.  
*Larus chalcopterus*.  
*Bissa brevirostris*.  
*nivea*.  
*Pagophila brachytarsi*.  
*Rhodostethia rosea*.  
*Oreogrus furcatus*.  
*Xema Sabini*.  
*Orelococephalus minutus*.<sup>1</sup>  
*Podiceps auritus*.<sup>1</sup>  
*Sagmatorhina labradoria*.  
*Brachyrhamphus Kittlitzii*.  
*Wrangellii*.  
*brachypterus*.  
 Total, 31 species.

The following species are probably accidental visitors only, and are not yet entitled to a permanent place in our fauna:

*Melospiza tyrannus*.  
*Saxicola cananthe*.  
*Chrysomitris magellanicus*.  
*Philomachus pugnax*.  
*Orex pratensis*.

*Heliornis surinamensis*.<sup>2</sup>  
*Mareca penelope*.  
*Nettion crecca*.  
*Erismatura dominica*.  
*Mergellus albellus*.—Total, 10 species.

## SUMMARY.

Species enumerated in the list .....	738
Of these, extralimital .....	22
Total of North American species <sup>1</sup> .....	716
North American birds given by Wilson in 1814 .....	283
North American birds given by Bonaparte, 1838 .....	471
North American birds given by Audubon in 1844 .....	506

## 79.

MR. BAIRD, SPENCER F. Birds found at Fort Bridger, Utah. < *Pacific Railroad Report*, ix, 1858, App. B, pp. 926, 927.

Merely a list of 104 spp., collected by C. Drexler.

<sup>1</sup> No North American specimens seen.

<sup>2</sup> Not enumerated in the list.

<sup>3</sup> Of these no specimens at all, of 28 species, were procured in this country for examination, and extralimital ones only of 3 others. Many supposed species are referred to in different parts of the report, some of which may prove genuine.

## 80.

1858. BAIRD, SPENCER F. Catalogue | of | North American Birds, | chiefly in the Museum of the | Smithsonian Institution. | By | Spencer F. Baird, | Assistant Secretary of the Smithsonian Institution. | — | Washington: | Smithsonian Institution. | October, 1858. | 4to, pp. xv-lvi.

A large edition of this catalogue, a reprint of pp. xvii-lvi of the General Report on Birds, was printed in Oct., 1858, and distributed as No. 106 of the publications of the Smithsonian Institution.

"Separate reissue, *V. L. P.*, with new title-page, of pp. xvii-lvi of the author's main work. Besides the list of 738 spp., with habitats, these sheets contain a table of the higher groups, list of extralimital species (23) which are included in the work, and of those (81) claiming to be North American, but not so identified, and a summary of the total number as variously given by Wilson, Bonaparte, and Audubon. The species being all numbered, the brochure was much used for several years for practically convenient reference to the species by number."—(COUES.)

## 81.

1858. BAIRD, SPENCER F. [Report for 1857 of the Assistant Secretary of the Smithsonian Institution.] < *Ann. Rep. Smithsonian Institution for the year 1857*, 1858, pp. 38-54.

Details of the system of exchanges ..... 44-46

## 82.

1858. BAIRD, SPENCER F. Description of a Phyllostome Bat from California, in the Museum of the Smithsonian Institution. < *Proc. Acad. Nat. Sci. Phila.*, x, 1858, pp. 116, 117. Presented May 4, ordered published May 25, 1858.

*Macrotus californicus*, Baird, n. s. .... 116  
Fort Yuma, Cal. Maj. G. H. Thomas.

## 83.

1858. BAIRD, SPENCER F. "Description of a new Sparrow collected by Mr. Samuels in California." < *Proc. Bost. Soc. Nat. Hist.*, vi, pp. 379, 380, Aug., 1858. Read June 2.

*Ammodromus Samuelis*, Baird, n. s. .... 379  
Petaluma, Cal. E. Samuels.

## 84.

1858. [BAIRD, SPENCER F.] Registry of Periodical Phenomena. < *Directions for Meteorological Observations and the Registry of Periodical Phenomena, Smiths. Misc. Coll.* (148), pp. 63-68.

Instructions for registering periodical phenomena of animal and vegetable life in North America.

## 85.

1858. [BAIRD, SPENCER F.] United States | Exploring Expedition. | During the years | 1838, 1839, 1840, 1841, 1842. | Under the command of Charles Wilkes, U. S. N. Vol. XX. | — | Herpetology. | Prepared under the superintendency of | S. F. Baird. | With a folio Atlas. | — | Philadelphia: | Printed by C. Sherman & Son. | 1858. 4to. pp. (4), v-ix, 492.

This book was not written by Professor Baird, who assures me that he did not touch pen to it. The work was done entirely by Dr. Charles Girard, but through some technicality his name was not allowed to appear on the title-page by the Naval authorities having the matter in charge, who insisted in publishing the book under the name of Professor Baird, to whom the original contract was given out. The matter is explained fully in the introduction, which is quoted entire:—

"INTRODUCTION.—The Joint Committee of the Library of Congress entered into an engagement with the undersigned, in 1857, to prepare the Report upon the Herpetological collections made by the United States Exploring Expedition. Finding that other duties would

1858. BAIRD, SPENCER F.—Continued.

interfere with the proper performance of the work, he was permitted to associate Dr. Girard with him in its execution, by whom the determinations and descriptions have been made, the drawings overlooked, and the work carried through the press. S. F. BAIRD. Washington, May, 1858. (p. vii.)"

As is well known only 100 copies of these reports were published by government, while the authors of the separate volumes were allowed to have 150 more printed at their own individual expense. In accordance with this ruling a special edition of this report was published by Girard with the following title:

1858. CHARLES GIRARD. United States | Exploring Expedition. | During the years | 1838, 1839, 1840, 1841, 1842. | Under the command of | Charles Wilkes, U. S. N. | Vol. XX. | — | Herpetology. | By | Charles Girard, | Doctor in Medicine and Surgery; Corresponding Member of the Boston | Society of Natural History; the Academy of Natural Sciences of Philadelphia; | the Lyceum of Natural History of New York; the Elliot Society of | Natural History of Charleston, S. C.; the California Academy | of Natural Sciences, San Francisco; the "Societe Helvetique | des Sciences Naturelles;" the "Naturforschende Gesell- | schaft in Zurich;" and the "Societe des Sciences | Naturelles de Neuchatel (Switzerland)," etc. | With a folio Atlas | — | Philadelphia | J. B. Lippincott & Co. | 1858. 4to. pp. i-xvii, 1-496, pll. i-xxxii.

Several additional plates were included in the Atlas to this edition.

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House of Representatives. { Ex. Doc., | — | Report | on the | United States }  
No. 135. { 1st Session. }
- and Mexican Boundary Survey, | made under | the direction of the Secretary of the Interior, | by | William H. Emory. | Major first Cavalry and United States Commissioner. | — | Volume II. | Washington: | Cornelius Wendell, Printer, | 1859. | 4to. 1st part Botany: pp. (8) 9-270 + pll. 1-67 + pp. 1-78 (Cactaceae) + pll. 1-75. 2d part Zoology: pp. (2) + 3-62, pll. xxvii (Mammals); pp. (2) 3-33 (1), pll. xxv (Birds); pp. (2) 3-35 (1), pll. xli (Reptiles); + pp. 85 + (3) + (1-11), + pll. xli (Fishes).

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1st Session. }

1859. BAIRD, SPENCER F.—Continued.

{ Ex. Doc. | — | Report | on the | United States and Mexican Boundary Sur-  
 { No. 135. | vey, | made under | the direction of the Secretary of the Interior, | by William  
 H. Emory, | Major First Cavalry and United States Commissioner. | — |  
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## 89.

1858. BAIRD, SPENCER F. Report for 1858 of the Assistant Secretary of the Smithsonian Institution. < *Ann. Rep. Smiths. Inst. for the year 1858, 1859*, pp. 44-62. Present condition of the Museum. [Materials contained in the Museum of the Smithsonian Institution], pp. 52-55. An enumeration of 49 collections, which chiefly make up the Museum.

## 90.

1859. BAIRD, SPENCER F. Smithsonian Miscellaneous Collections. | — | Directions | for | collecting, preserving, and transporting | specimens of natural history. | Prepared for the use of | the Smithsonian Institution. | [Seal of Smithsonian Institution.] | [Third edition.] | Washington: Smithsonian Institution. | March, 1859. 8vo. pp. 40, 6 cuts. No. 34, S. I. In Smithsonian Miscellaneous Collections, Vol. II, Art. VII.

## 91.

1859. BAIRD, SPENCER F. Smithsonian Miscellaneous Collections. | — | Catalogue | of | North American Birds | chiefly in the Museum of the | Smithsonian Institution. | By | Spencer F. Baird. | [First octavo edition.] | [Seal of Smithsonian Institution.] | Washington: | Smithsonian Institution. | 1859. 8vo. 2 p. ll., pp. 19 + 2.

This catalogue is a reprint, with some changes from the one in quarto forming a portion of the Report on North American Birds in Vol. IX of the Reports of the Pacific Railroad Survey, and published as a separate paper by the Smithsonian Institution in October, 1858. Its object was to facilitate the labeling of the specimens of birds and eggs in the Museum of the Institution, as also to serve the purpose of a check-list of the species.

A special edition was printed on one side of the paper only for labeling, also an edition on thin blue paper for mailing.

In the octavo edition the note on habitat and the references to the pages of the report, which were included in the quarto edition, are omitted, the serial number of the species, the scientific name, and the common name alone being given.

This publication was issued as No. 108 of the Smithsonian series, and was included in Vol. II of the Miscellaneous Collections. Several editions have in subsequent years been struck off from the same plates, and probably 10,000 copies of the catalogue have been distributed.

This is the most usual form of the "Smithsonian Catalogue" of North American birds, which has become a classical work among ornithologists, and in accordance with which the majority of American collections of skins and eggs are labeled. A revision of this, from the hand of Robert Ridgway, is now in press.

## 92.

1859. BAIRD, SPENCER F. Explorations and surveys for a railroad route from the Mississippi River to the Pacific Ocean. | War Department. | — | Reptiles: | By Spencer F. Baird, | Assistant Secretary of the Smithsonian Institution. | — | Washington, D. C. | 1859. < <sup>23d Congress,</sup> } House of Representatives. <sub>2d Session.</sub> { Ex. Doc. | — | Reports | of | explorations and surveys, | to | ascertain the No. 91. most practicable and economical route for a railroad | from the | Mississippi River to the Pacific Ocean. | Made under the direction of the Secretary of War, in | 1853-6. | According to acts of Congress of March 3, 1853, May 31, 1854, and August 5, 1854. | — | Volume X. | — | Washington: | A. O. P. Nicholson, printer. | 1859. Parts iii and iv. 4to. First article. No text, pll. xxiv-xxvi.\*

This report consists entirely of plates, the text being omitted.

"As the general report on the reptiles of Western North America, observed by the different exploring parties, has been excluded from the series for want of room, all that can be given here is an explanation of the plates prepared for this report. These represent the details of external form in different species of North American Serpents. \* \* \* The figures have, as far as possible, been taken from the type-specimens of the species, especially those described in the Catalogue of Serpents in the Museum of the Smithsonian Institution (1853), to which the page-column refers."

\* "The make-up of the tenth volume of the Pacific Railroad Reports is such that it might be styled the 'Bibliographer's Despair'; it contains about 20 different title-pages and a corresponding number of different paginations."—GILL & COUZA.

1859. BAIRD, SPENCER F.—Continued.

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XXIV...	1	<i>Orotatus durissus</i> , L. P. ....	1	Carlisle, Pa. ....	All.
	2	<i>Orotatus adamanteus</i> , Beauv. ....	3	Pensacola, Fla. ....	All.
	3	<i>Orotatus atrox</i> , B. and G. ....	5	Indianola, Tex. ....	U. L. S. F.
	4	<i>Orotatus confluentus</i> , Say. ....	8	Red River. ....	All.
	5	<i>Orotatus molossus</i> , B. and G. ....	10	Sonora. ....	U. L. S. F. SC.
	6	<i>Orotatus oregonus</i> , Holb. ....	145	Oregon ? ....	U. SC.
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	11	Bis <i>Orotalophorus Kirtlandii</i> , (young). ....	16	Ohio. ....	S.
	12	<i>Ancistrodon contortrix</i> , B. and G. ....	17	Near San Antonio, Tex. ....	All.
	13	<i>Toxicophis piscivorus</i> , B. and G. ....	19	Red River, La. ....	All.
XXVI...	14	<i>Toxicophis pugnax</i> , B. and G. ....	20	Indianola. ....	All.
	15	<i>Elaps fulvius</i> , Cuv. ....	21	Charleston, S. C. ....	All.
	16	<i>Elaps tener</i> , B. and G. ....	22	San Felipe, Tex. ....	All.
	17	<i>Elaps tristis</i> , B. and G. ....	23	Kemper Co., Miss. ....	All.
	18	<i>Dipsas septentrionalis</i> , Kennicott <sup>1</sup> . ....	.....	Brownsville, Tex. ....	All.
	19	<i>Eutaenia saurita</i> , B. and G. ....	24	Carlisle, Pa. ....	All.
	20	<i>Eutaenia Fairleyi</i> , B. and G. ....	25	Red River, La. ....	All.
XXVII..	21	<i>Eutaenia proxima</i> ?, B. and G. ....	25	Indianola, Tex. ....	All.
	22	<i>Eutaenia ornata</i> , B. and G. <sup>2</sup> . ....	28	San Antonio to El Paso. ....	All.
	23	<i>Eutaenia sirtalis</i> , B. and G. ....	30	Westport, N. Y. ....	All.
	24	<i>Eutaenia ordinata</i> , B. and G. ....	32	Riceboro', Ga. ....	All.
	25	<i>Eutaenia radix</i> , B. and G. ....	34	Racine, Wis. ....	All.
	26	<i>Eutaenia marciiana</i> , B. and G. ....	36	Red River. ....	U. L. S. F. SC.
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	3	<i>Eutaenia ordinoides</i> , B. and G. ....	33	California. ....	All. <sup>3</sup>
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	28	<i>Nerodia erythrogaster</i> , B. and G. ....	40	Red River, La. ....	U. L. S. F. SC.
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	30	<i>Nerodia Holbrookii</i> , B. and G. ....	43	Red River, La. ....	All.
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	34	<i>Regina Grahamsii</i> , B. and G. ....	47	Texas. ....	All.
	35	<i>Regina Clarkii</i> , B. and G. ....	48	Indianola. ....	U. L. S. F. SC.
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XXIX...	45	<i>Pityophis Sayi</i> , B. and G. ....	151	Fort Snelling. ....	All.
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	48	<i>Pityophis annectens</i> , B. and G. ....	72	San Diego, Cal. ....	All.

<sup>1</sup> U. S. Boundary Report, II, 1859; Reptiles, p. 16.<sup>2</sup> U. S. Boundary Report, II, 1859; Reptiles, p. 16: *Eutaenia parietalis*, Cat. Serpenta, 28.<sup>3</sup> A, head from above; B, head from side; C, head from below; D, anal region; E, side scales.<sup>4</sup> Kennicott, Fr. A. N. Sc., viii, April, 1856, p. 93.

1869. BAIRD, SPENCER F.—Continued.

## Explanation of the plates—Continued.

Plata.	Fig.	Name.	Page.	Locality.	Details given.
XXIX...	49	<i>Scotophis alleghaniensis</i> , B. and G.	73	Carlisle, Pa.	U. L. S. F. SC.
	50	<i>Scotophis Lindheimeri</i> , B. and G.	74	New Braunfels, Tex.	All.
	51	<i>Scotophis vulpinus</i> , B. and G.	75	Racine, Wis.	All.
XXX...	52	<i>Scotophis confinis</i> , B. and G.	76	Anderson, S. C.	U. S.
	53	<i>Scotophis laevis</i> , B. and G.	77	Red River, Ark.	All.
	54	<i>Scotophis guttatus</i> , B. and G.	78	Kemper Co., Miss.	All.
	55	<i>Scotophis 4-vittatus</i> , B. and G.	80	Florida.	U. L. S. F. SC.
	56	<i>Scotophis Emoryi</i> , B. and G.	187	Howard Springs, Tex.	All.
	57	<i>Ophibolus Boylii</i> , B. and G.	82	Eldorado Co., Cal.	U. L. S. F. SC.
	58	<i>Ophibolus splendidus</i> , B. and G.	83	Sonora.	All.
	59	<i>Ophibolus Sayi</i> , B. and G.	84	Red River, Ark.	U. L. S. F. SC.
	60	<i>Ophibolus rhombomaculatus</i> , B. and G.	86	Georgia.	All.
	61	<i>Ophibolus eximius</i> , B. and G.	87	Warren, Mass.	All.
XXXI...	62	<i>Ophibolus clericus</i> , B. and G.	88	Clark Co., Va.	All.
	63	<i>Ophibolus dolatus</i> , B. and G.	89	Kemper Co., Va.	All.
	64	<i>Ophibolus gentilis</i> , B. and G.	90	Red River, Ark.	All.
	65	<i>Ophibolus getulus</i> , B. and G.	85	Charleston, S. C.	All.
	66	<i>Georgia obsoleta</i> , B. and G.	158	Brownsville, Tex.	All.
	67	<i>Bascanion constrictor</i> , B. and G.	93	Carlisle.	All.
	68	<i>Bascanion Fremontii</i> , B. and G.	95	California.	All.
	69	<i>Bascanion Forst.</i> , B. and G.	96	Michigan. (Both sides of head drawn to show difference in labials.)	All.
	70	<i>Bascanion flaviventris</i> , B. and G.	96	Texas?	All.
	71	<i>Masticophis flageliformis</i> , B. and G. (old).	96	Pensacola, Fla.	All.
XXXII..	72	<i>Masticophis flageliformis</i> (young).	149	Georgia.	U. L. S. F.
	73	<i>Masticophis fasciularis</i> , B. and G. (young).	90	Indianola, Tex.	U. L. S. F.
	74	<i>Masticophis mormon</i> , B. and G.	101	Salt Lake.	All.
	75	<i>Masticophis ornatus</i> , B. and G.	102	San Antonio to El Paso.	All.
	76	<i>Masticophis taeniatus</i> , B. and G.	103	California.	All.
	77	<i>Masticophis Schottii</i> , B. and G.	160	Eagle Pass.	All.
	78	<i>Salvadora Grahamia</i> , B. and G.	104	Sonora.	U. L. S. F. SC.
	79	<i>Leptophis astivus</i> , Bell.	106	Anderson, S. C.	U. L. S. F. SC.
	80	<i>Leptophis majalis</i> , B. and G.	107	Indianola.	U. S.
	81	<i>Ohlorosoma vernalis</i> , B. and G.	108	Westport, N. Y. (2 diam.)	S. A.
XXXIII.	1	<i>Diadophis docilis</i> , B. and G.	114	Tucson. (2 diam.)	All.
	2	<i>Diadophis</i>		Santa Magdalena. (2 diam.*)	All.
	3	<i>Wenona</i>		Oregon*	All.
	82	<i>Diadophis punctatus</i> , B. and G.	112	Carlisle, Pa.	U. S.
	83	<i>Diadophis amabilis</i> , B. and G.	113	San José, Cal.	All.
	84	<i>Diadophis docilis</i> , B. and G.	114	San Pedro, Comanche Spr'g	All.
	85	<i>Diadophis pulchellus</i> , B. and G.	115	Eldorado Co., Cal.	All.
	86	<i>Diadophis regalis</i> , B. and G.	116	Sonora, Mex.	All.
	87	<i>Taeniophis imperialis</i> , B. and G. <sup>1</sup>		Brownsville, Tex.	All.
	88	<i>Sonora semi-annulata</i> , B. and G.	117	Sonora.	S. U.
	89	<i>Ekinostoma coccinea</i> , Holb.	118	Riceboro', Ga.	All.
	90	<i>Rhinocheilus Lecontei</i> , B. and G.	120	California.	U. L. S. F. SC.
	91	<i>Haldea striatula</i> , B. and G.	122	Richmond, Va. (2 diam.)	U. L. S. F. SC.
	92	<i>Farancia abacura</i> , B. and G.	123	Red River, La.	U. L. S. F. SC.
	93	<i>Abastor erythrogrammus</i> , Gray.	125	Southern States.	U. L. S. F. SC.
	94	<i>Virginia valeria</i> , B. and G.	127	Maryland. (2 diam.)	U. L. S. F. SC.
	95	<i>Celuta amovena</i> , B. and G.	129	Carlisle. (2 diam.)	U. L. S. F. SC.

<sup>1</sup>References as in pl. xxvi, figg. 1-3.<sup>2</sup>*Taeniophis imperialis*, B. and G., Mexican Boundary Report, ii, 1859; Reptiles, 23.



1859. BAIRD, SPENCER F.—Continued.

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Plate.	Fig.	Name.	Page.	Locality.	Details given.
XXXIII.	96	<i>Tantilla coronata</i> , B. and G .....	131	Kemper Co., Miss. (2 diam.)	U. S.
	97	<i>Oceola elapsoides</i> , B. and G. ....	133	Charleston, S. C. (2 diam.)	U. S.
	98	<i>Storeria DeKayi</i> , B. and G. ....	135	Framingham, Mass. (2 diam.)	U. S.
	99	<i>Storeria occipito-maculata</i> , B. and G.	137	Madrid, N. Y. (2 diam.)..	U. S.
	100	<i>Bena dulcis</i> , B. and G .....	142	San Pedro, Can. Sp., Tex. (3 diam.)	U. L. S.
XXXIV.	1	<i>Georgia Oouperi</i> , B. and G .....	92	Georgia .....	A. B. C. D. E. <sup>1</sup>
	2	<i>Nerodia rhombifer</i> , B. and G .....	147	Arkansas .....	As in fig. 1.
	3	<i>Nerodia Woodhousei</i> , B. and G .....	42	Texas .....	As in fig. 1.
	4	<i>Nerodia fasciata</i> , B. and G .....	39	South ? .....	As in fig. 1. <sup>2</sup>
	5	<i>Eutaenia radix</i> , B. and G .....	34	Wisconsin ? .....	As in fig. 1.
	6	<i>Micrope lineatus</i> , Hall <sup>3</sup> .....		Fort Chadbourne, Tex. ....	As in fig. 1.
	7	— 1 .....			
XXXV.	1	<i>Crotalus tigris</i> , Kennicott <sup>4</sup> .....			As in fig. 1.
	2	<i>Crotalus</i> .....		Colorado Bottom .....	As in fig. 1.
	3	<i>Crotalus</i> .....		Sierra Verde, California ..	As in fig. 1.
	4	<i>Crotalus cerastes</i> , Hallow <sup>5</sup> .....			As in fig. 1.
	5	<i>Crotalus</i> .....		Sierra Verde, Cal .....	As in fig. 1.
	6	<i>Lamprosooma occipitale</i> , Hall <sup>6</sup> .....		Colorado Desert .....	As in fig. 1.
	7	<i>Lamprosooma occipitale</i> , Hall <sup>7</sup> .....		California .....	As in fig. 1.
	8	<i>Toluca lineata</i> , Kenn. <sup>8</sup> .....		Valley of Mexico .....	As in fig. 1.
XXXVI.	1	<i>Crotalus lucifer</i> , B. and G .....	6	Oregon .....	As in fig. 1.
	2	<i>Eutania leptocephala</i> , B. and G .....	29	Oregon .....	As in fig. 1.
	3	<i>Eutania Pickeringii</i> , B. and G .....	27	Oregon .....	As in fig. 1.
	4	<i>Ptyophis catenifer</i> , B. and G .....	60	California .....	As in fig. 1.
	5	<i>Ptyophis Wilkesii</i> , B. and G .....	71	Oregon .....	As in fig. 1.
	6	<i>Bascanion vetustus</i> , B. and G .....	97	Oregon .....	As in fig. 1.
	7	<i>Oontia mitis</i> , B. and G .....	110	Oregon. (2 diam.) .....	As in fig. 1.
	8	<i>Lodia tenuis</i> , B. and G .....	116	Oregon. (2 diam.) .....	As in fig. 1.

Pp. 14, 15, 16, pll. xxiv-xxxvi.

<sup>1</sup> All, except head from front.<sup>2</sup> Add F, dorsal scales; G, side view of ditto, showing a peculiar serration of the carination.<sup>3</sup> Hallowell, Pr. A. N. So., viii, 1854, 240.<sup>4</sup> Mex. Bound. Rep., ii, 1839; Reptiles, 14.<sup>5</sup> Hallowell, Pr. A. N. So., vii, June, 1854, 95.<sup>6</sup> U. S. Mex. Bound., ii, 1859; Reptiles, 21.<sup>7</sup> Hallowell, Pr. A. N. So., ut supra.<sup>8</sup> Kennicott, ut supra, 23.

1859. BAIRD, SPENCER F. No. 1. Report upon Mammals collected on the Survey.

< Explorations and surveys for a railroad route from the Mississippi River to the Pacific Ocean. | War Department. | — | Report | of | Lieut. E. G. Beckwith, | Third Artillery, | upon | Explorations for a Railroad Route, | near | the 38th and 39th parallels of north latitude, | by | Captain J. W. Gunnison, | Corps of Topographical Engineers, | and near | the forty-first parallel of north latitude, | by | Lieut. E. G. Beckwith, | Third Artillery. | — | 1854. Zoölogical Report, xx, 1857, in Report P. R. R. Surv., vol. x, 1859. Third Article. pp. (1) 7-9 (1), pll. v-x.

*Solurus Fremontii*, Towns ..... pl. xi p. 1*Tamias quadrivittatus*, Wagner.*Oryzomys Gunnisonii*, Baird ..... pl. iv, fig. 2*Geomys castaneus*, Leconte ..... pl. x, fig. 2*Thomomys rufescens*, Maxim. .... pl. x, fig. 1*Dipodomys Ordii*, Woodhouse.

## 89. BAIRD, SPENCER F.—Continued.

*Perognathus flavus*, Baird.*Jaouus Hudsonius*.*Reithrodon montanus*, Baird ..... p. 9*Arvicola modesta*, Baird.

## 94.

## 1850. BAIRD, SPENCER F. No. 2. Report on Birds collected on the Survey. &lt; Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Ocean. | War Department. | — | Report | of | Lieut. E. G. Beckwith, | Third Artillery, | upon | Explorations for a Railroad Route, | near | the 38th and 39th parallels of north latitude, | by | Captain J. W. Gunnison, | Corps of Topographical Engineers, | and near | the forty-first parallel of north latitude, | by | Lieut. E. G. Beckwith, | Third Artillery. | — | 1854. pp. 11-16, pll. xii, xiii, xiv, xv, xvii, xxxii, xxxv, in Rep. P. R. R. Surv., vol. x. Third article.

*Buteo Swainsoni*, Bonaparte.....pll. xii and xiii p. 11*Buteo calurus*, Cassin .....pl. xiv*Buteo oxypterus*, Cassin .....pl. xv*Buteo montanus*, Nuttall ..... 12*Oreus Hudsonius*, Linnaeus.*Tinnunculus sparverius*,*Otus Wilsonianus*, Lesson.*Athene cunicularia*, Molina..... 13*Chordeiles Henryi*, Cassin .....pl. xvii*Sialia arctica*, Swainson .....pl. xxxv*Eremophila cornuta*, Boie .....pl. xxxii*Xanthocephalus icterocephalus*.*Corvus carnivorus*, Bartram ..... 14*Picus Hudsonica*, Bonap.*Perisoreus canadensis*, Bonap.*Centrocercus urophasianus*, Swainson.*Grus canadensis*, Temm.*Symphemia semipalmata*, Hartlaub ..... 15*Numenius longirostris*, Wilson ..... 15*Fulica americana*, Gmelin.*Oxygnus americanus*, Sharpless.*Anas boschas*, L.*Aythya americana*, Bon ..... 18*Nettion carolinensis*, Baird.*Bucephala americana*, Baird.

## 95.

## 1850. BAIRD, SPENCER F. No. 3. Report on Reptiles collected on the Survey. &lt; Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Ocean. | War Department. | — | Report | of | Lieut. E. G. Beckwith, | Third Artillery, | upon | Explorations for a Railroad Route, | near | the 38th and 39th parallels of north latitude, | by | Captain J. W. Gunnison, | Corps of Topographical Engineers, | and near | the forty-first parallel of north latitude, | by | Lieut. E. G. Beckwith, | Third Artillery. | — | 1854. pp. 17-20 [in Rep. P. R. R. Surv., vol. x, third article], pll. xvii, xviii, xxiii, xxiv.

*Sceloporus graciosus*, B. and G..... p. 17*! Sceloporus occidentalis*, B. and G.*! Sceloporus longipes*, Baird.*Crotaphytus collaris*, Holbrook .....pl. xxiv, fig. 1*Crotaphytus Wislizenii*, B. and G.*Callisaurus ventra is*, Baird.*Holbrookia maculata*, Girard..... 18*Tapaya brevirostris*, Girard.*Tapaya Douglassii*, Girard.*Doliosaurus platyrhinos*, Girard.*Onamidophorus tessellatus*, Baird.

## 1859. BAIRD, SPENCER F.—Continued.

<i>Plestiodon skiltonianus</i> , B. and G.	
<i>Plestiodon guttulatus</i> , Hallowell.	
<i>Plestiodon septentrionalis</i> , Baird .....	pl. xxiv, fig. 2
<i>Eutaenia ordinoides</i> , B. and G. ....	p. 1
<i>Eutaenia vagrans</i> , B. and G. ....	pl. xvii
<i>Nerodia erythrogaster</i> , B. and G. ....	pl. xviii
<i>Heterodon nasicus</i> , B. and G.	
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<i>Bufo Woodhousii</i> , Girard.	
<i>Amblystoma mavortium</i> , Baird.	
<i>Siredon lichenoides</i> , Baird.	

## 96.

1859. BAIRD, SPENCER F. No. 4. Report upon the Reptiles of the Route. <Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Ocean. | War Department. | — | Route near the Thirty-fifth Parallel explored by Lieutenant A. W. Whipple, Topographical Engineer, in 1843 and 1854. | — | Zoological Report. | — | Washington, D. C. | 1859. | — | [vol. x, Report P. R. R. Surv., part vi, No. 4.] pp. 37-45, pls. xxv, xxvi, xxvii

<i>Sceloporus undulatus</i> , Wieg.	p.
<i>Sceloporus spinosus</i> , Wieg.	
<i>Sceloporus consobrinus</i> , B. and G.	
<i>Sceloporus Thayeri</i> , B. and G.	
<i>Orotaphytus collaris</i> , Holbrook.	
<i>Orotaphytus Wislizeni</i> , B. and G.	
<i>Uta Stansburiana</i> , B. and G.	
<i>Holbrookia maculata</i> , Girard. ....	
<i>Holbrookia texana</i> , B. and G.	
<i>Tapaya Hernandezii</i> , Girard.	
<i>Tapaya ornaticincta</i> , Girard.	
<i>Phrynosoma cornutum</i> , Gray.	
<i>Doliosaurus modestus</i> , Girard.	
<i>Onemidophorus sex-lineatus</i> , D. B.	
<i>Onemidophorus gularis</i> , B. and G.	
<i>Heloderma horridum</i> , Wiegman.	
<i>Plestiodon fasciatus</i> .....	
<i>Plestiodon obsoletus</i> , B. and G.	
<i>Lygosoma laterale</i> , Dum. Bib.	
<i>Orotalus durissus</i> , Linn.	
<i>Orotalus atrox</i> , B. and G.	
<i>Orotalus confuentus</i> , Say .....	
<i>Orotalophorus miltariis</i> , Holbrook.	
<i>Tamiasophis piscivorus</i> , B. and G.	
<i>Eutaenia proxima</i> , B. and G.	
<i>Eutaenia dorsalis</i> , B. and G.	
<i>Eutaenia vagrans</i> , B. and G. ....	
<i>Eutaenia marioniana</i> , B. and G.	
<i>Nerodia Woodhousii</i> , B. and G.	
<i>Nerodia erythrogaster</i> , B. and G.	
<i>Heterodon nasicus</i> , B. and G.	
<i>Ptyophis bellona</i> , B. and G. ....	
<i>Arizona elegans</i> , Kennicott.	
<i>Scotophis alleghaniensis</i> , B. and G.	
<i>Scotophis Emoryi</i> , B. and G. ....	
<i>Ophibolus Evansii</i> , Kennicott.	
<i>Ophibolus splendidus</i> , B. and G.	
<i>Masticophis testaceus</i> , B. and G.	
<i>Leptophis majalis</i> , B. and G.	
<i>Diadophis doctis</i> , B. and G.	
<i>Bufo americanus</i> , Leconte. ....	pl. xxv, fig. 2
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## 1859. BAIRD, SPENCER F.—Continued.

<i>Bufo cognatus</i> , Say .....	pl. xxvi
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<i>Rana Oatesiana</i> , Shaw .....	p. 45
<i>Rana clamitans</i> , Daud. ....	
<i>Rana kalcina</i> , Kalm. ....	
<i>Rana Berlandieri</i> , Baird. ....	
<i>Necturus lateralis</i> , Baird. ....	

## 97.

1859. BAIRD, SPENCER F. Report on Mammals collected on the Survey. No. 3. < Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Ocean. | War Department. | — | Routes in California, to connect with the routes near the Thirty-fifth and Thirty-second Parallels, explored by Lieut. R. S. Williamson, Corps of Top. Eng., in 1853. | — | Zoological Report. | — | Washington, D. C. | 1859. [In vol. x, Report P. R. R. Surv., part iv, art. 3.] pp. 81, 82.

<i>Vespertilis pallidus</i> , Leconte .....	p. 81
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<i>Spermophilus Beecheyi</i> , Rich. ....	
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<i>Dipodomys Philippii</i> , Gray. ....	
<i>Perognathus parvus</i> , Leconte. ....	
<i>Hesperomys Gambelii</i> , Baird. ....	

## 98.

1859. "EDITORIAL. [S. F. Baird's Résumé of Ornithological Field Operations in progress in America, etc.] < *Ibis*, i, 1859, pp. 334, 335.

## 99.

1859. BAIRD, SPENCER F. Notes on a collection of Birds made by Mr. John Xantus, at Cape St. Lucas, Lower California, and now in the Museum of the Smithsonian Institution. < *Proc. Acad. Nat. Sci. Phila.*, xi, 1859 (1860), pp. 299–306. Presented for publication Nov. 8, ordered printed Nov. 29, 1859.

The paper preceding this one is "Descriptions of supposed new species of Birds from Cape St. Lucas, Lower California. By John Xantus," *op. cit.*, pp. 297–299, in which are described 4 new species, included in the list now under consideration.

Peculiarities of the Zoology of Cape St. Lucas .....	p. 299
Bird fauna of Cape St. Lucas. ....	
Mammal fauna of Cape St. Lucas. ....	
Reptile fauna of Cape St. Lucas. ....	
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Physical features of Cape St. Lucas. ....	
Laws of distribution, migration, size, exemplified in the Cape St. Lucas collection. ....	
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Relations of land fauna of Mexico. ....	
Relations of Marine Invertebrates of Cape St. Lucas to those of Mexico .....	302
Note by William Stimpson on the Crustaceans of Cape St. Lucas. ....	
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1. <i>Tinnunculus sparverius</i> , Vieillot. ....	302
2. <i>Bubo virginianus</i> , Bonap. ....	
3. <i>Picus lucasianus</i> , Xantus. ....	
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(Ref. to <i>Colaptes</i> collected by Mr. Schott, P. R. R. Rep., ix, p. 125.)	
6. <i>Geococcyx californicus</i> , Baird .....	303
7. <i>Chordeiles texensis</i> , Lawrence. ....	
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\* Name only. Others have descriptive or critical remarks.

## 1859. BAIRD, SPENCER F.—Continued.

- \*9. *Sayornis nigricans*, Bonaparte.
- \*10. *Empidonax obscurus*, Baird.
- 11. *Hirundo thalassina*, Swainson.
- \*12. *Progne purpureus*, Boie.
- \*13. *Phainopepla nitens*, Sclater.
- 14. *Mimus polyglottus*, Boie.
- 15. *Harporhynchus cinereus*, Xantus.....P.
- 16. *Campylorhynchus affinis*, Xantus.
- 17. *Poliophtila melanura*, Lawrence.....
- 18. *Paroides flaviceps*, Baird.
- 19. *Carpodacus frontalis*, Gray.
- \*20. *Chondestes grammacus*, Bonap.
- 21. *Zonotrichia leucophrys*, Swains.
- 22. *Oalamospiza bicolor*, Bonap.
- \*23. *Guizaca melanocephala*, Swains.
- 24. *Oyanospiza versicolor*, Baird.
- 25. *Pyrrhuloxia sinuata*, Bonap.
- 26. *Cardinalis igneus*, Baird, n. s. ....
- Cape St. Lucas. J. Xantus.
- 27. *Pipilo albigula*, Baird, n. s. ....
- Cape St. Lucas. J. Xantus.
- 28. *Agelaius* ———.
- 29. *Icterus parisorum*, Bonap.
- \*30. *Icterus cucullatus*, Swainson.
- 31. *Cyanocitta californica*, Strickland.
- 32. *Melospiza leucoptera*, Bonap.
- 33. *Chamaepelia passerina* ? var. *pallascens*, Baird, n. s.
- \*34. *Lophortyx californicus*, Bonap.
- 35. *Gezetta thula*, Bonap. ?
- 36. *Aegialitis vociferus*, Cassin .....
- \*37. *Callidris arenaria*, Illiger.
- \*38. *Fulica americana*, Gmel.
- 39. *Graeculus dilophus* ? Gray.
- 40. *Thalassidroma melania*, Bonap.
- 41. *Blastopus Heermanni*, Bonap.
- 42. *Brachyrhamphus hypoleucus*, Xantus.

## 100.

## 1859. BAIRD, SPENCER F. Description of New Genera and Species of North American Lizards in the Museum of the Smithsonian Institution. &lt;Proc. Nat. Sci. Phila., x, 1858 (1859), pp. 253-256. Presented for publication 21 (p. 222), ordered printed Dec. 28.

- Euphryne*, Baird, n. g. (*Iguanidae*.)
- Euphryne oboesus*, Baird, n. s.
- Cañons of Colorado and California.
- Orotaphytus reticulatus*, Baird, n. s.
- Laredo and Ringgold Barracks, Texas.
- Uta symmetrica*, Baird, n. s.
- Fort Yuma, Cal.
- Uta Schottii*, Baird, n. s.
- Santa Madelina, Cal.
- Uma*, Baird, n. g. (*Iguanidae*.)
- Uma notata*, Baird, n. s.
- Mohave Desert.
- Holbrookia approximans*, Baird, n. s.
- Lower Rio Grande.
- Sceloporus floridanus*, Baird, n. s. ....
- Pensacola, Fla.
- Sceloporus ornatus*, Baird, n. s.
- Patos, Coahuila.
- Sceloporus longipes*, Baird, n. s.
- Fort Tejon, Cal.
- Sceloporus Ouachiti*, Baird, n. s.
- Santa Calenna. N. Leon.

## 1859. BAIRD, SPENCER F.—Continued.

- Anolis Cooperi*, Baird, n. s.  
California.
- Sphaeriodactylus notatus*, Baird, n. s.  
Key West, Fla.
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- Xantusia*, Baird, new family.
- Xantusia*, Baird, n. g. .... p. 265
- Xantusia vigilis*, Baird, n. s.  
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- Onemidophorus inornatus*, Baird, n. s.  
New Leon.
- Onemidophorus octolineatus*, Baird, n. s.  
New Leon.
- Gerrhonotus Webbi*, Baird, n. s.  
Near San Diego, Cal.
- Gerrhonotus infernalis*, Baird, n. s.  
Devil's River, Texas.
- Gerrhonotus olivaceus*, Baird, n. s.  
Near San Diego.
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Micanopy, Fla.
- Platiodon leptogrammus*, Baird, n. s. .... 266  
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- Platiodon inornatus*, Baird, n. s.  
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- Platiodon tetragrammus*, Baird, n. s.  
Lower Rio Grande.
- Platiodon egregius*, Baird, n. s.  
Indian Key, Fla.
- Platiodon septentrionalis*, Baird, n. s.  
Minnesota and Nebraska.

## 101.

1859. BAIRD, SPENCER F. Mammals | of | North America; | the descriptions of species based chiefly on the collections | in the | Museum of the Smithsonian Institution. | By Spencer F. Baird, | Assistant Secretary of the Smithsonian Institution. | With Eighty-seven Plates of Original figures, illustrating the genera and species, and including details of external forms, | and osteology. | — | Philadelphia: | \*J. B. Lippincott & Co. | 1859. 4to. pp. xxxiv, 1-735 + 1-55 + 737-764, pl. i-lxxxvi (Mammals).

This special edition is made up from the reports on the Mammals in Vol. VIII of the Pacific Railroad Reports and in Vol. II, Part II, of the Reports of the Mexican Boundary Survey.

Part I "is a reprint of the General Report on the Mammals of the Pacific Railroad surveying parties, which, for reasons explained on page xxvi of the preface, embraces all the known species (excepting of *Cheiroptera*, *Pinnipedia*, and *Cetacea*) north of Mexico." pp. xi-xxxiv of this edition correspond to pp. xxv-xlvi of the original work, while pp. 1-735 are the same. To this part is prefixed a special title-page, as follows:

= | Part I. | — | General Report | upon the Mammals | of | the several Pacific Railroad Routes. | By | Spencer F. Baird, | Assistant Secretary of the Smithsonian Institution. | — | Washington, D. C. | July, 1857. | = |

"To this is added, as Part II, the Special Report on the Mammals of the United States and Mexican Boundary Survey, as in it the species found along the boundary-line are treated of more fully than in Part I."

To this part is prefixed a special title-page, as follows:

= | Part II. | — | Special Report | upon the Mammals of the Mexican Boundary. | By | Spencer F. Baird, | Assistant Secretary of the Smithsonian Institution; | with notes by the naturalists of the survey. | — | Washington, D. C. | January, 1859. | = |

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\* Some copies have the imprint of D. Appleton & Co.

## 1859. BAIRD, SPENCER F.—Continued.

Part II embraces pp. 3-55 of the Mexican Boundary Mammals.

Part III.—References to the figures is made up anew for this edition. "To the 43 plates accompanying the General Report on Mammals in Volume VIII of the Pacific Railroad series have been added 17 others, scattered through the different volumes, as well as 27 accompanying the Mexican Boundary Report. Such of the figures as require are colored, in this edition, for the first time. They represent the external form of 47 species, with details of structure, and the skulls and teeth of 106 others, making 161 species illustrated in some way."

## SYSTEMATIC LIST OF ILLUSTRATIONS.

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## 102.

1860. BAIRD, SPENCER F. [Report for 1859 of the Assistant Secretary of the Smithsonian Institution.] < *Ann. Rep. Smiths. Inst. for the year 1859, 1860*, pp. 54-78.

American Explorations of the year ..... pp. 63-68  
 Continuation of the enumeration of the collections making up the Museum, Nos.  
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## 103.

1860. BAIRD, SPENCER F. The Birds of North America; the descriptions of species based chiefly on the collections in the Museum of the Smithsonian Institution. By Spencer F. Baird, Assistant Secretary of the Smithsonian Institution, with the co-operation of John Cassin, of the Academy of Natural Sciences of Philadelphia, and George N. Lawrence, of the Lyceum of Natural History of New York. With an Atlas of One Hundred Plates. Text. — Philadelphia: J. B. Lippincott & Co. 1860. 4to. pp. lvi, 1006.

1860. BAIRD, SPENCER F.—Continued.

## "ADVERTISEMENT.

"The present work is, in part, a reprint of the General Report on North America presented to the Department of War, and published in October, 1858, as one of the 'Reports of Explorations and Surveys of a Railroad Route to the Pacific Ocean.' volume, however, will be found many important additions and corrections, including lists of plates, both numerical and systematic, descriptions of newly-discovered spots in the original edition.

"The Atlas contains one hundred plates, representing one hundred and forty-eight unfigured species of North American birds. Of these plates about fifty appear for the first time, having been prepared expressly for this work. The remainder form the ornithological illustrations of the Reports of the Pacific Railroad Survey, and of the United States Mexican Boundary Survey under Major Emory, and are distributed throughout the volumes composing those series. All have, however, been carefully retouched and corrected for this edition, and quite a number redrawn entirely from better and more characteristic specimens. In fact, the plates of the Atlas have been prepared expressly for this edition with the utmost care and attention.

"In the volume of text will be found a complete account of the birds of North America brought down to the present time, including accurate descriptions of all known species, their arrangement in the genera and families recognized by modern zoologists; geographical distribution; and, as far as possible, all other information necessary to a summary or manual of North American ornithology. No other work extant gives a complete ornithology of our country; and it has been the especial object of the author to adapt it to the wants of the student and lover of nature, and to present it in a condensed form, and at a price within the reach of all, a reliable text-book in this department of natural history. Extended bibliographical notices, embracing full references to very nearly all authors on American ornithology, have been added, and will be of high interest to the student and naturalist."

The only difference between this volume and Vol. IX of the Pacific R. R. Survey is in the addition of preface and different lists of plates. The first few pages are arranged differently, as the following table will show:

	In this volume.	In P. R.
Advertisement .....	p. i.....	i.....
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The remaining pages appear to be precisely the same.

## 104.

1860. BAIRD, SPENCER F. The Birds of North America; the descriptive species based chiefly on the collections in the Museum of the Smithsonian Institution. By Spencer F. Baird, Assistant Secretary of the Smithsonian Institution, with the co-operation of John Cassin of the Academy of Natural Sciences of Philadelphia, and George N. Lawrence, of the Department of Natural History of New York. With an Atlas of One Hundred and Ten Plates. — Philadelphia: J. B. Lippincott & Co. 1860. 4to. p. (2) 100 plates.

"The present Atlas has been prepared for the two-fold purpose of completing the illustrations of the Birds of North America, and to give accurate and easily reproducible figures of the numerous hitherto unknown birds described in the first volume. It figures of all birds inhabiting the United States which have not been given by former authors, in connection with whose works it continues and concludes, as far as to the present time the pictorial representation of all North American birds. In the accompanying volume of text will be found descriptions of all the known birds of the States; their arrangement in the genera and families of modern zoologists; their geographical distribution; and, it is believed, everything necessary to a complete and accurate knowledge of this favorite department of the natural history of our country.

"In 1843 the distinguished ornithologist, Mr. Audubon, brought to a completion the first and last edition of his great work on the Birds of North America, in which are given full and accurate representations of nearly five hundred species. This elaborate work included all the birds known to that celebrated author as inhabiting the continent of North America.

## 1860. BAIRD, SPENCER F.—Continued.

"In 1853 Mr. Cassin commenced the publication of a work entitled 'Illustrations of the Birds of California, Texas, Oregon, and British and Russian America: intended to contain descriptions and figures of all North American birds not given by former American authors, and a general synopsis of North American Ornithology.' Philadelphia: J. B. Lippincott & Co. The first series, containing plates of fifty species not given by Audubon, was completed in 1855, and has not been extended, having been superseded by the present work.

"Many of the birds of the United States, not included in the works of the preceding or other American authors, having been collected by the several parties for the Survey of a Railroad Route to the Pacific Ocean, and of the Boundary between the United States and Mexico, as mentioned in the preface to volume I of this work; they were figured in the reports of these expeditions published by Congress under the direction of the War and Interior Departments. All of these birds appear in the present volume, but, in almost every instance, redrawn from better and more characteristic specimens. Of the one hundred plates, however, of this volume, about one-half appear for the first time, having been prepared expressly for the present work. Many of the latter represent birds of Eastern North America.

"As already stated, the work of Mr. Audubon contains figures of somewhat less than five hundred species of North American birds; that of Mr. Cassin contains fifty species. In the present volume will be found one hundred and forty-eight species, nearly all of which are now represented for the first time in any work on American Ornithology. The three works together include illustrations of very nearly all the known birds of North America. A few species only are wanting, chiefly of Russian America and other remote localities, of which no specimens are preserved in American museums. All are carefully described, however, in the preceding volume."

## EXPLANATION OF PLATES.

[NOTE.—Where not otherwise mentioned the specimens figured are to be considered as in the Museum of the Smithsonian Institution, and the numbers refer to the Smithsonian record of birds. The original of each figure is indicated as far as can now be ascertained. The numbers in parenthesis refer to the numbers of the plates in the Mexican Boundary series.]

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"The present work is intended as a catalogue of the birds of Northern and Middle America in the Museum of the Smithsonian Institution, with such critical notices of the same as appear to be called for, and a list of the specimens, or of such of them as best show the geographical distribution of the species. Species not in the Smithsonian collection, but which I have had the opportunity of personally examining and comparing, are also included. Species mentioned by authors, but which I have not seen, will be mentioned at the end of the genera or families to which they are supposed to belong."

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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

2. Next, it is essential to gather relevant information and data. This can be done through research, consultation with experts, or by analyzing existing data sets.

3. Once the information is gathered, the next step is to analyze it. This involves identifying patterns, trends, and relationships that can help in understanding the problem more deeply.

4. After analysis, the next step is to develop a solution or a plan of action. This should be based on the insights gained from the analysis and should be tailored to the specific requirements of the task.

5. Finally, the solution or plan should be implemented and monitored. This involves putting the plan into action and tracking its progress to ensure that it is effective and meets the desired outcomes.

[illegible]

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"In compliance with a generally expressed wish, the names of the authors of the different portions of the Scientific Summary are given, for the first time in the present volume of the Record, in connection with their respective communications, all of them men occupying the front rank in America, as authors and investigators. Other collaborators not contributors to the first division of the volume are Prof. C. F. Hines, of Dickinson College, Carlisle, Pa.; Prof. F. W. Clarke, of the University of Cincinnati, Ohio; Prof. E. D. Cope, of Philadelphia; Prof. F. V. Hayden; Maj. J. W. Powell, Lieutenant Geo. M. Wheeler, U. S. A., and several others who prefer to remain unmentioned." (PREFACE.)

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A new edition of the circular bearing the same title, previously issued. [U. S. F. C., 3= No. 217.]

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- A. Fishing vessels.
- B. Shore and boat fishing.
- C. Pounds and weirs.
- D. Gill-nets.
- E. Seines.
- F. Fish-pots and eel-pots.
- G. Three-mile lines.
- H. Disposition of the fish.
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1878. BAIRD, SPENCER F. (*editor*). Annual Record | of | Science and Industry | for 1877. | Edited by | Spencer F. Baird, | with the assistance of eminent men of science. | [Cut.] | New York: | Harper & Brothers, Publishers. | Franklin Square. | 1878. 8vo. pp. xiv, 480.—Preface dated March 1, 1878.

"A modification of the original plan of the 'Annual Record' was commenced in the volume for 1877. Previous to that it consisted of two parts—first, a general summary of progress in the various branches of science; and, secondly, a series of abstracts of special papers, credited to the work in which they were published. These abstracts, although prepared by several specialists, were without indication of their authorship. The experience of several years showed that, in attempting to give abstracts of anything like the most important announcements of the year, more space was required than could be spared for the purpose: and it was therefore determined to enlarge the scope of the first division, and make it include a greater amount of detail, each summary to be prepared by some eminent specialist, and to be headed by his name."

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## 1005.

1878. BAIRD, SPENCER F. (E) $\frac{B}{9}$ . | U. S. Commission of Fish and Fisheries. | = |  
Questions relative | to the | Cod and the Cod Fisheries. | — | [Foolscap size.  
4 pp. Washington, Government Printing Office, 1878.] [U. S. F. C., 28.]  
Circular addressed to fishermen, transmitting 90 questions prepared by G. Brown Goode.

## 1006.

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## 1009.

1878. BAIRD, SPENCER F. The Delaware Salmon. < *Chicago Field*, ix, 1878, p. 165.  
Letter to Commissioner Anderson.

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1878. BAIRD, SPENCER F. A request from the United States Commissioner of Fish  
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## 1012.

- BAIRD, SPENCER F. Salmon in the Hudson. < *Forest and Stream*, x, 1878, p. 154.

## 1013.

1878. BAIRD, SPENCER F. Natural History of the Howgate Expedition. < *Forest and Stream*, ix, 1878, p. 413.  
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## 1014.

1878. BAIRD, SPENCER F. All about Eels. < *Forest and Stream*, xi, 1878, pp. 130, 131.  
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## 1015.

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## 1016.

1879. BAIRD, SPENCER F. Fishes of the Deep Sea. < *Forest and Stream*, xii, 1879, p. 6.

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1879. BAIRD, SPENCER F. The Hudson Salmon. < *Forest and Stream*, xii, 1879, p. 444.

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1879. BAIRD, SPENCER F. Smithsonian Miscellaneous Collections. | —324— | Circular Relative to Scientific and Literary Exchanges. | 8vo. 2 pp. Dated Jan. 1, 1879.

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1879. BAIRD, SPENCER F. (editor). Annual Record | of | Science and Industry | for 1878. | Edited by | Spencer F. Baird, | with the assistance of eminent men of science. | [Cut.] | New York: | Harper & Brothers, Publishers, | Franklin Square. | 1879. 8vo. pp. xvii (i), 715. Preface dated March 1, 1879.

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1874. BAIRD, SPENCER F., T. M. BREWER, and R. RIDGWAY. A | History | of | North  
American Birds | By | S. F. Baird, T. M. Brewer, and R. Ridgway | Land  
Birds | Illustrated by 64 Colored Plates and 593 Woodcuts. | Volume [1-2-3]  
| [Cut] | Boston | Little, Brown, and Company | 1874. Three volumes, 4to,  
pp.: Vol. I, XXVIII, 596, VI; Vol. II, 590, VI; Vol. III, 560, XXVIII.

The present work is designed to meet the want, which has long been felt, of a descriptive account of the Birds of North America, with notices of their geographical distribution, habits, methods of nesting, character of eggs, their popular nomenclature, and other points connected with their life history.

For many years past the only systematic treatises bearing upon this subject have been "The American Ornithology" of Alexander Wilson, finished by that author in 1814, and brought down to the date of 1827 by George Ord; the "Ornithological Biography" of Audubon, bearing the date of 1838, with a second edition "Birds of America," embracing a little more of detail, and completed in 1844; and "A Manual of the Ornithology of the United States and Canada," by Nuttall, of which a first edition was published in 1832 and a second in 1840. Since then no work relating to American Ornithology, of a biographical nature, has been presented to the public, with the exception of some of limited extent, such as those of Girard, on the "Birds of Long Island," in 1844; DeKay's "Birds of N. Y.," 1844. Sumner's "Ornithology and Oology of New England," 1868, and a few others; together with a number of minor papers on the less localities of greater or less

## 374. BAIRD, SPENCER F., T. M. BREWER, and R. RIDGWAY—Continued.

published in periodicals and the Proceedings of Societies. The reports of many of the government exploring parties also contain valuable data, especially those of Dr. Newberry, Dr. Heermann, Dr. J. G. Cooper, Dr. Suckley, Dr. Kennerly, and others.

More recently (in 1870) Professor Whitney, Chief of the Geological Survey of California, has published a very important volume on the ornithology of the entire west coast of North America, written by Dr. J. G. Cooper, and containing much original detail in reference to the habits of the western species. This is by far the most valuable contribution to the biography of North American birds that has appeared since the time of Audubon, and, with its typographical beauty and numerous and excellent illustrations, all on wood and many of them colored, constitutes one of the most noteworthy publications in American Zoölogy.

Up to the time of the appearance of the work of Audubon, nearly all that was known of the great region of the United States west of the Missouri River was the result of the journey of Lewis & Clark up the Missouri and across to the Pacific Coast, and that of John K. Townsend and Mr. Nuttall, both of whom made some collections and brought back notices of the country, which, however, they were unable to explore to any great extent. The entire region of Texas, New Mexico, Colorado, Arizona, Nevada, and California was unvisited, as also a great portion of territory north of the United States boundary, including British Columbia and Alaska.

A work by Sir John Richardson, forming a volume in his series of "Fauna Boreali-Americana," in reference to the ornithology of the region covered by the Hudson Bay Company's operations, was published in 1831, and has been much used by Mr. Audubon, but embraces little or nothing of the great breeding grounds of water birds in the neighborhood of the Great Slave and Bear Lakes, the Upper Yukon, and the shores of the Arctic coast.

It will thus be seen that a third of a century has elapsed since any attempt has been made to present a systematic history of the birds of North America.

The object of the present work is to give, in as concise a form as possible, an account of what is known of the birds, not only of the United States, but of the whole region of North America north of the boundary-line of Mexico, including Greenland on the one side, and Alaska with its islands on the other. The published materials for such a history are so copious that it is a matter of surprise that they have not been sooner utilized, consisting, as they do, of numerous scattered biographies and reports of many government expeditions and private explorations. But the most productive source has been the great amount of manuscript contained in the archives of the Smithsonian Institution, in the form of correspondence, elaborate reports, and field-notes of collectors and travelers, the use of which, for the present work, has been liberally allowed by Professor Henry. By far the most important of these consist of notes made by the late Robert Kennicott in British America, and received from him and other gentlemen in the Hudson Bay Territory, who were brought into intimate relationship with the Smithsonian Institution through Mr. Kennicott's efforts. Among them may be mentioned more especially Mr. R. MacFarlane, Mr. B. K. Ross, Mr. James Lockhart, Mr. Lawrence Clark, Mr. Strachan Jones, and others, whose names will appear in the course of the work. The especial value of the communications received from these gentlemen lies in the fact that they resided for a long time in a region to which a large proportion of the rapacious and water birds of North America resort during the summer for incubation, and which until recently has been sealed to explorers.

Equally serviceable has been the information received from the Yukon River and Alaska generally, including the Aleutian Islands, as supplied by Messrs. Robert Kennicott, William H. Dall, Henry M. Bannister, Henry W. Elliott, and others.

It should be understood that the remarks as to the absence of general works on American Ornithology, since the time of Audubon, apply only to the life history of the species, as, in 1858, one of the authors of the present work published a systematic account of the birds of North America, constituting volume IX of the series of Pacific Railroad Reports; while from the pen of Dr. Elliott Coues, a well-known and eminent ornithologist, appeared in 1872 a comprehensive volume, entitled "A Key to North American Birds," containing descriptions of the species and higher groups.

The technical, or descriptive, matter of the present work has been prepared by Messrs. Baird and Ridgway, that relating to the *Raptores* entirely by Mr. Ridgway; and all the accounts of the habits of the species are from the pen of Dr. Brewer. In addition to the matter supplied by these gentlemen, Professor Theodore N. Gill has furnished that portion of the introduction defining the class of birds as compared with other vertebrates; while to Dr. Coues is to be given the entire credit for the pages embracing the tables of the Orders and Families, as well as for the Glossary beginning on page 535 of Vol. III.

Nearly all the drawings of the full-length figures of birds contained in the work were made directly on the wood, by Mr. Edwin L. Sheppard, of Philadelphia, from original sketches taken from nature; while the heads were executed for the most part by Mr. Henry W. Elliott and Mr. Ridgway. Both series have been engraved by Mr. Hobart H. Nichols, of Washing-

## 1874. BAIRD, SPENCER F., T. M. BREWER, and R. RIDGWAY—Continued.

ton. The generic outlines were drawn by Anton H. Schönborn, and engraved by the peculiar process of Jewett, Chandler & Co., of Buffalo. All of these, it is believed, speak for themselves, and require no other commendation.

A considerable portion of the illustrations were prepared, by the persons mentioned above, for the Reports of the Geological Survey of California, and published in the volume on Ornithology. To Professor Whitney, Chief of the Survey, acknowledgments are due for the privilege of including many of them in the present History of North American Birds, and also for the Explanation of Terms on page 526 of Vol. III.

A few cuts, drawn by Wolf and engraved by Whymper, first published in "British Birds in their Haunts," and credited in their proper places, were kindly furnished by the London Society for the Diffusion of Christian Knowledge; and some others prepared for an unpublished volume by Dr. Blasius, on the Birds of Germany, were obtained from Messrs. Vieweg and Son, of Braunschweig.

The volume on the Water Birds is in an advanced state of preparation, and will be published with the least possible delay.

SPENCER F. BAIRD.

SMITHSONIAN INSTITUTION,

Washington, January 8, 1874.

< Baird, Brewer, and Ridgway.—Birds of North America, Vol. I, Preface.

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## II. SYSTEMATIC CATALOGUE.

**NOTE.**—In the Systematic Catalogue which follows, Professor Baird's writings are classified with reference to the topics of which they treat. It should be noted that the articles in the *Annual Record of Science and Industry*, to which frequent reference is made, are in large part critical notices and reviews of the work of other writers.

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- 221.—1872.** Annual Record of Science and Industry for 1871. Edited by Spencer F. Baird, with the assistance of eminent men of science. [Cut.] New York: Harper & Brothers, publishers, Franklin Square, 1872 [8vo. pp. xxxii, 634.] Titles 134 to 215, 222.

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## (III.)

- 736.—1875.** Annual Record of Science and Industry for 1873. Edited by Spencer F. Baird, with the assistance of Eminent Men of Science. [Cut.] New York: Harper & Brother, Publishers, Franklin Square. 1875. (8vo. pp. cxxxii, 714. Titles 439-613, 757-60.

## (IV.)

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## (V.)

- 803.—1876.** Annual Record of Science and Industry for 1875. Edited by Spencer F. Baird, with the assistance of eminent men of science. [Cut.] New York: Harper & Brothers, Publishers, Franklin Square. 1876. (8vo. pp. ccxc. 656.) Titles 777-881, 884, 7.

## (VI.)

- 970.—1877.** Annual Record of Science and Industry for 1876. Edited by Spencer F. Baird, with the assistance of Eminent Men of Science. [Cut.] New York: Harper & Brothers, publishers, Franklin Square. 1877. [8vo. pp. ccxxxvi, 609.] Titles 896-969, 971-74.

## (VII.)

- 1004.—1878.** Annual Record of Science and Industry for 1877. Edited by Spencer F. Baird, with the assistance of eminent men of science. [Cut.] New York: Harper & Brothers, Publishers, Franklin Square. 1878. 8vo. pp. xiv, 480.—Preface dated March 1, 1878.

## (VIII.)

- 1030.—1879.** Annual Record of Science and Industry for 1878. Edited by Spencer F. Baird, with the assistance of eminent men of science. [Cut.] New York: Harper & Brothers, Publishers, Franklin Square. 1879. 8vo. pp. xvii (1), 715. Preface dated March 1, 1879.



## III. LIST OF SPECIES DISCUSSED AND ILLUSTRATED.

## NOTE.

Under each of the classes mentioned in the analysis the genera and species are arranged alphabetically according to their generic and specific designations. These lists will be of importance chiefly to persons familiar with the synonymy of the several groups. The importance of this collation of references to descriptions and illustrations prepared by Professor Baird will be evident, since his work carried him over the entire field of North American vertebrate zoology, and every mammal, bird, and reptile known at the time of his researches was exhaustively treated, as well as a large number of fishes. These lists have also a definite value as constituting a key to the major portion of the descriptive work accomplished in the National Museum during the first twenty years of its history. The names of all the species illustrated by engravings or lithographs are printed in SMALL CAPS; the list thus serves as an index to the very numerous illustrations prepared under the supervision of Professor Baird.

It has not been thought necessary to specially index each genus of which a diagnosis has been given. It may be understood that each genus of which the species are discussed in "(76) Pacific Railroad Survey, vol. viii," and "(101) Mammals of North America," in "(78) Pacific Railroad Survey, vol. ix," or (632½) Birds of North America, 1874," or in "(39) Catalogue of North American Reptiles" is discussed and briefly diagnosed in those works. Discussions of genera in works other than these are especially indexed.

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## ALUX AMERICANUS.

- (76) P. R. R. Surv., vol. viii, p. 632, figg. 1-2;  
(101) Mammals of N. A., 1859. Horns,  
adult, woodcut, fig. 1 young, fig. 2, p. 632.

## ALCES AMERICANA.

- (2) Rep. Comm. Pat. for 1851, p. 112, pl. viii.

## ATLOXAPRA AMERICANA.

- (22) Rep. of Comm. of Patents for 1851, p. 121,  
plate 1; (76) P. R. R. Surv., vol. viii, p. 666,  
pl. xvi, xxx, figg. 23-24, p. 668; (86) Mex.  
Bound. Surv., vol. ii, p. 51; (101) Mammals  
of N. A., 1859. Animal, pl. xvi. Various  
horns, pl. xxx. Muzzle and hoof, woodcut,  
figg. 23-24, p. 668.

## APILOXUS MONTANUS.

- (76) P. R. R. Surv., vol. viii, p. 671.

## APLODONTIA LEPORINA.

- (76) P. R. R. Surv., vol. viii, p. 353, pl. xx, fig. 4;  
(101) Mammals of N. A., 1859. Details,  
pl. xx, fig. 4. Skull, pl. xlix, fig. 2.

## ARCTOMYS FLAVIVENTER.

- (76) P. R. R. Surv., vol. viii, p. 343, pl. xlvii, fig.  
1; (101) Mammals of N. A., 1859. Skull,  
pl. xlvii, fig. 1.

## Arctomys Lewis.

- (76) P. R. R. Surv., vol. viii, p. 347.

## ARCTOMYS MONAX.

- (76) P. R. R. Surv., vol. viii, p. 339, pl. xlix, fig.  
1; (101) Mammals of N. A., 1859. Skull,  
pl. xlix, fig. 1.

## Arctomys prinosus.

- (76) P. R. R. Surv., vol. viii, p. 345.

## Arvicola albo-rufescens.

- (76) P. R. R. Surv., vol. viii, p. 549.

## ARVICOLA AUSTREA.

- (76) P. R. R. Surv., vol. viii, p. 539, pl. liv, No.  
1587; (101) Mammals of N. A., 1859.  
Teeth, pl. liv, No. 1587.

## Arvicola borealis.

- (76) P. R. R. Surv., vol. viii, p. 549.

## Arvicola Breweri.

- (76) P. R. R. Surv., vol. viii, p. 525.

## Arvicola californica.

- (76) P. R. R. Surv., vol. viii, p. 532.

## ARVICOLA CINNAMOMEA.

- (76) P. R. R. Surv., vol. viii, p. 541, pl. liv, No.  
1714; (101) Mammals of N. A., 1859.  
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- Arvicola Dekayi*.  
(76) P. R. R. Surv., vol. viii, p. 549.
- Arvicola Drummondii*.  
(76) P. R. R. Surv., vol. viii, p. 550.
- Arvicola edax*.  
(76) P. R. R. Surv., vol. viii, p. 531.
- Arvicola Gapperi*.  
(76) P. R. R. Surv. vol. viii, p. 518.
- Arvicola Haydenii*.  
(76) P. R. R. Surv., vol. viii, p. 543.
- Arvicola hirsutus*.  
(76) P. R. R. Surv., vol. viii, p. 550.
- Arvicola longirostris*.  
(76) P. R. R. Surv. vol. viii, p. 530.
- Arvicola modesta*.  
(76) P. R. R. Surv., vol. viii, p. 535; (93) P. R. R. Surv., vol. x, p. 9.
- ARVICOLA MONTANA*.  
(76) P. R. R. Surv., vol. viii, p. 528, pl. xxi, fig. 2; (101) Mammals of N. A., 1859. Details, pl. xxi, fig. 2.
- Arvicola nasuta*.  
(76) P. R. R. Surv., vol. viii, p. 550.
- Arvicola occidentalis*.  
(76) P. R. R. Surv. vol. viii, p. 534.
- Arvicola onيدا*.  
(76) P. R. R. Surv., vol. viii, p. 551.
- Arvicola oregoni*.  
(76) P. R. R. Surv. vol. viii, p. 537.
- ARVICOLA PINETORUM*.  
(76) P. R. R. Surv., vol. viii, p. 544, pl. liv, No. 1719; (101) Mammals of N. A., 1859. Teeth, pl. liv, No. 1719.
- Arvicola Richardsonii*.  
(76) P. R. R. Surv. vol. viii, p. 531.
- Arvicola riparia*.  
(76) P. R. R. Surv., vol. viii, p. 522.
- Arvicola rubricatus*.  
(76) P. R. R. Surv. vol. viii, p. 551.
- Arvicola rufidorsum*.  
(76) P. R. R. Surv. vol. viii, p. 526.
- Arvicola texiana*.  
(76) P. R. R. Surv., vol. viii, p. 552.
- ARVICOLA TOWNSENDII*.  
(76) P. R. R. Surv., vol. viii, p. 527; (101) Mammals of N. A., 1859. Teeth, pl. liv, No. 1593.
- Arvicola vanthognathus*.  
(76) P. R. R. Surv., vol. viii, p. 532.
- Auchenia llama*.  
(64) Gillis, Naval Astr. Exp., ii, p. 159; (65) Ibid., ii, p. 170.
- Palena antarctica*.  
(65) Gillis, Naval Astr. Exp., ii, p. 171.
- RASSARIS ASTUTA*.  
(76) P. R. R. Surv., vol. viii, p. 147; (86) Mex. Bound. Surv., vol. ii, p. 15; (101) Mammals of N. A., 1859. Skull, pl. lxxiv, fig. 2.
- Risson americanus*.  
(22) Rep. of Comm. of Patents for 1851, p. 124, pl. 7, figure 2nd.
- BLARINA ANCIUTREPA*.  
(76) P. R. R. Surv., vol. viii, p. 47, pl. xxx; Mammals of N. Amer., 1859. Pl. xx, fig. 7.
- BLARINA BERLANDIERI*.  
(76) P. R. R. Surv., vol. viii, p. 32, pl. xxvii; (86) Mex. Bound. Surv., vol. ii, p. 5; (101) Mammals of N. Amer., 1859. Animal and skull, pl. xxviii, No. 2159.
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(76) P. R. R. Surv., vol. viii, p. 42, pl. xxx; (101) Mammals of N. Amer., 1859. Details, pl. xxx, fig. 5.
- BLARINA CAROLINENSIS*.  
(76) P. R. R. Surv., vol. viii, pl. xxx, p. 45; (101) Mammals of N. Amer., 1859. Details, pl. xxx, fig. 8.
- BLARINA CINEREA*.  
(76) P. R. R. Surv., vol. viii, p. 45, pl. xxx; (101) Mammals of N. Amer., 1859. Details, pl. xxx, figg. 9, 10.
- BLARINA EXILIPES*.  
(76) P. R. R. Surv., vol. viii, p. 51, pl. xxvii; (101) Mammals of N. Amer., 1859. Animal and skull, pl. xxvii, No. 2157.
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(76) P. R. R. Surv., vol. viii, p. 682, figg. 34, 35, p. 683; (86) U. S. and Mex. Bound. Surv., vol. ii, p. 53; (101) Mammals of N. A., 1859. Muzzle and hoof, woodcut, figg. 34, 35, p. 683.
- Canis AZARW.*  
(64) Gillis, Naval Astr. Exp., ii, p. 154; (65) Ibid., ii, p. 164.
- Canis fulvipes*.  
(65) Gillis, Naval Astr. Exp. ii, p. 164.
- CANIS LATRANS*.  
(76) P. R. R. Surv., vol. viii, p. 113; (86) Mex. Bound. Surv., vol. ii, p. 16, pl. xvi; (101) Mammals of N. Amer., 1859. Skull, pl. lxxvi.
- Canis magellanicus*.  
(64) Gillis, Naval Astr. Exp., ii, p. 154; (65) Ibid., ii, p. 164.
- Canis occidentalis ater*.  
(76) P. R. R. Surv. vol. viii, p. 113.
- CANIS OCCIDENTALIS GRISEO-ALBUS*.  
(76) P. R. R. Surv. vol. viii, p. 104, pl. xxxi. (101) Mammals of N. Amer., 1859. Skull, pl. xxxi.
- Canis occidentalis mexicanus*.  
(76) P. R. R. Surv. vol. viii, p. 113; (86) Mex. Bound. Surv. vol. ii, p. 14.
- Canis occidentalis nubilus*.  
(76) P. R. R. Surv., vol. viii, p. 111.
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(22) Rep. of Comm. of Patents for 1851, p. 126, plate 4.

- (76) P. R. R. Surv., vol. viii, p. 355, pl. xlviii, and Surv., vol. ii, p. 40; (101) Mammals of N. A., 1859. Skull, pl. xlviii.
- (76) P. R. R. Surv., vol. viii, p. 363.
- (76) Gillia, Naval Astr. Exp., ii, p. 156; (65) Gillia, Naval Astr. Exp., ii, p. 167.
- CANADENSIS.**  
(76) P. R. R. Surv., vol. viii, p. 638, figg. 2, 10, p. 639, fig. 11, p. 641; (101) Mammals of N. A., 1859. Muzzle, wood-cut, fig. 9; hoof, fig. 10, p. 639; horns, fig. 11, p. 641.
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(28) Rep. of Comm. of Patents for 1851, p. 119; (76) P. R. R. Surv., vol. viii, p. 649, figg. 14, 15, 17, p. 651; fig. 18, p. 652; fig. 16, p. 651.
- LEWISII.**  
(28) Rep. of Comm. of Patents for 1851, p. 118, plate 5.
- MACROTIS.**  
(28) Rep. of Comm. of Patents for 1851, p. 118; (76) P. R. R. Surv., vol. viii, p. 656, pl. xxiii, fig. 1, figg. 19, 20, p. 657; (86) Mex. Bound. Surv., vol. ii, p. 51; (101) Mammals of N. A., 1859. Feet, pl. xxiii, fig. 1; horns, wood-cut, figg. 19, 20, p. 657.
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(76) P. R. R. Surv., vol. viii, p. 656, pl. xxiv; (86) U. S. and Mex. Bound. Surv., vol. ii, p. 50; (101) Mammals of N. A., 1859. Feet, pl. xxiv, fig. 2.
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(65) Gillia, Naval Astr. Exp., ii, p. 171.
- VIRGINIANUS.**  
(76) P. R. R. Surv., vol. viii, p. 643, pl. xxiv, fig. 1, fig. 12, p. 644, fig. 13, p. 648; (86) Mex. Bound. Surv., vol. ii, p. 50; (101) Mammals of N. A., 1859. Feet, pl. xxiv, fig. 1; muzzle, wood-cut; fig. 12, p. 644; horns, fig. 13, p. 648.
- HAIGERA.**  
(65) Gillia, Naval Astr. Exp., ii, p. 167.
- TRUNCATUS.**  
(65) Gillia, Naval Astr. Exp., ii, pp. 158, 170, pl. xi.
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(76) P. R. R. Surv., vol. viii, p. 71, pl. xviii, figg. 1, 3; (101) Mammals of N. A., 1859. Details of external form, pl. xviii, figg. 1, 2.
- MAGALLANICUS.**  
(65) Gillia, Naval Astr. Exp., ii, p. 168.

**CYNOMYS GUNNISONII.**

- (76) P. R. R. Surv., vol. viii, p. 335, pl. xlvii, fig. 1; (86) P. R. R. Surv., vol. x, p. 8, pl. iv, fig. 2; (101) Mammals of N. A., 1859. Animal, pl. iv, fig. 2; skull, pl. xlvii, fig. 4.

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- (76) P. R. R. Surv., vol. viii, p. 331, pl. xlvii, figg. 2, 3; (86) Mex. Bound. Surv., vol. ii, p. 39; (101) Mammals of N. A., 1859. Skull and teeth, pl. xlvii, figg. 2, 3.

**DAEYPUS MINUTUS.**

- (65) Gillia, Naval Astr. Exp., ii, p. 170.

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- (76) P. R. R. Surv., vol. viii, p. 623; (86) Mex. Bound. Surv., vol. ii, p. 48, pl. xxvi; (101) Mammals of N. A., 1859. Skull, pl. lxxxvi.

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- (65) Gillia, Naval Astr. Exp., ii, p. 171.

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- (65) Gillia, Naval Astr. Exp., ii, p. 171.

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- (65) Gillia, Naval Astr. Exp., ii, p. 163.

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- (76) P. R. R. Surv., vol. viii, p. 627; (86) Mex. Bound. Surv., vol. ii, p. 50, pl. xxvii, figg. 1, 2; (101) Mammals of N. A., 1859. Skull, pl. lxxxvii, figg. 1, 2.

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- (76) P. R. R. Surv., vol. viii, p. 233; (86) Mex. Bound. Surv., vol. ii, p. 32, pl. iii; (101) Mammals of N. A., 1859. Animal, pl. lxiii, fig. 1, adult; fig. 2, young.

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- (76) P. R. R. Surv., vol. viii, p. 232; (86) Mex. Bound. Surv., vol. ii, p. 31.

**DIPDOMYS AGILIS.**

- (60) Pr. Ac. Nat. Sci. Phila., 1854, p. 324-5; (76) P. R. R. Surv., vol. viii, p. 414, pl. ix, fig. 1; (86) U. S. and Mex. Bound. Surv., vol. ii, p. 42, pl. xxiii, fig. 2; (101) Mammals of N. A., 1859. Animal, pl. ix, fig. 2; skull, pl. lxxxiii, fig. 2.

**DIPDOMYS HEERMANNI.**

- (76) P. R. R. Surv., vol. viii, p. 415.

**DIPDOMYS MONTANUS.**

- (60) Pr. Ac. Nat. Sci. Phila., 1854, p. 324.

**DIPDOMYS ORDII.**

- (76) P. R. R. Surv., vol. viii, p. 410, pl. v, xxi, fig. 1, pl. ii, figg. 1, 2; (86) Mex. Bound. Surv., vol. ii, p. 42, pl. ix, fig. 3, pl. xxiii, fig. 3; (93) P. R. R. Surv., vol. x, p. 8; (101) Mammals of N. A., 1859. Animal, pl. v, fig. 1, and pl. lxix, fig. 3. Details, pl. xix, fig. 1; skull much enlarged, pl. ii, fig. 1; natural size, fig. 2; also, pl. lxxxiii, fig. 3.

**DIPDOMYS ORDII MONTANUS.**

- (86) Mex. Bound. Surv., vol. ii, p. 42, pl. xxiii, fig. 4; (101) Mammals of N. A., 1859, pl. lxxxiii, fig. 4.

**DIPDOMYS PHILLIPPI.**

- (76) P. R. R. Surv., vol. viii, p. 412; (97) P. R. R. Surv., vol. x, p. 82.

**DIPDOMYS WAGNERI.**

- (76) P. R. R. Surv., vol. viii, p. 415.

- Dydelphys elegans.*  
(64) Gillis, Naval Astr. Exp., ii, p. 155; (65) Gillis, Naval Astr. Exp., ii, p. 166.
- Dysopes nasutus.*  
(65) Gillis, Naval Astr. Exp., ii, p. 163.
- ELAPHUS CANADENSIS.*  
(22) Rep. of Comm. of Patents for 1851, p. 116, pl. 6.
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(76) P. R. R. Surv., vol. viii, p. 189.
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(76) P. R. R. Surv., vol. viii, p. 568, pl. lv, fig. 3; (101) Mammals of N. A., 1859. Upper view of skull, pl. lv, fig. 3.
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(76) P. R. R. Surv., vol. viii, p. 569, pl. lv, figg. 1, 2.  
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- FELIS CONCOLOR.*  
(65) Gillis, Naval Astr. Exp., ii, p. 164; (64) Gillis, Naval Astr. Exp., ii, p. 153; (65) Gillis, Naval Astr. Exp., ii, p. 164; (76) P. R. R. Surv., vol. viii, p. 83, pl. ii, fig. 2; (86) Mex. Bound. Surv., vol. ii, p. 5, pl. xi, figg. 1, 2; (101) Mammals of N. A., 1859. Animal very young, pl. ii, fig. 2; skull, adult, pl. lxxi, fig. 1; young, pl. lxxi, fig. 2.
- FELIS HYRA.*  
(76) P. R. R. Surv., vol. viii, p. 88; (86) Mex. Bound. Surv., vol. ii, p. 10, pl. 2, fig. 7; pl. xiii, fig. 2; (101) Mammals of N. A., 1859. Animal, pl. lxii, fig. 1; Skull, pl. lxxiii, fig. 2.
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(65) Gillis, Naval Astr. Exp., ii, p. 164.
- Felis onca.*  
(76) P. R. R. Surv., vol. viii, p. 86.
- Felis onza.*  
(86) Mex. Bound. Surv., vol. ii, p. 6.
- Felis pajeros.*  
(65) Gillis, Naval Astr. Exp., ii, p. 164.
- FELIS PARDALIS.*  
(76) P. R. R. Surv., vol. viii, p. 87; (86) Mex. Bound. Surv., vol. ii, p. 8, pl. xii, xiii, fig. 1; (101) Mammals of N. A., 1859. Skull, adult, pl. lxxii; young, pl. lxxiii, fig. 1.
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(76) P. R. R. Surv., vol. viii, p. 88; (86) Mex. Bound. Surv., vol. ii, p. 12, pl. xiv, fig. 1; (101) Mammals of N. A., 1859. Skull, pl. lxxiv, fig. 1.
- FIBER ZIBETHICUS.*  
(29) Stansbury's Surv. Salt Lake [App. C], p. 312; (76) P. R. R. Surv., vol. viii, p. 561, pl. liv, No. 626; (86) U. S. and Mex. Bound. Surv., vol. ii, p. 45, pl. xxiv, fig. 3; (101) Mammals of N. A., 1859. Teeth, pl. liv, No. 626.
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(64) Gillis, Naval Astr. Exp., ii, p. 155; (65) Gillis, Naval Astr. Exp., ii, p. 165.
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(60) Pr. Ac. Nat. Sci. Phila., 1854, p. 335; (76) P. R. R. Surv., vol. viii, p. 378, pl. lii, fig. 2; (101) Mammals of N. A., 1859. Skull, pl. iii, fig. 2.
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- GEOMYS CLARKII.*  
(59) Pr. Ac. Nat. Sci. Phila., 1854, p. 334; (76) P. R. R. Surv., vol. viii, p. 383; (86) Mex. Bound. Surv., vol. ii, p. 41, pl. ix, fig. 1, pl. xxiii, fig. 1; (101) Mammals of N. A., 1859. Animals and details, pl. lxxx, fig. 1; skull, pl. lxxxiii, fig. 2.
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(76) P. R. R. Surv., vol. viii, p. 389, pl. xxii, fig. 3; (101) Mammals of N. A., 1859. Details, pl. xxii, fig. 3.
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(29) Stansbury's Surv. Salt Lake [App. C], p. 311; (76) P. R. R. Surv., vol. viii, p. 181.
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(65) Gillis, Naval Astr. Exp., ii, p. 163.
- Habrocoma Cuvieri.*  
(65) Gillis, Naval Astr. Exp., ii, p. 163.
- Hesperomys austerus.*  
(60) Pr. Ac. Nat. Sci. Phila., 1854, p. 336; (76) P. R. R. Surv., vol. viii, p. 468.
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(60) Pr. Ac. Nat. Sci. Phila., 1854, p. 335; (76) P. R. R. Surv., vol. viii, p. 471, pl. viii, fig. 3, pl. lii, fig. 3.
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(65) Gillis, Naval Astr. Exp., ii, p. 160.
- Hesperomys californicus.*  
(76) P. R. R. Surv., vol. viii, p. 478.
- Hesperomys campestris.*  
(76) P. R. R. Surv., vol. viii, p. 485.
- Hesperomys cognatus.*  
(76) P. R. R. Surv., vol. viii, p. 469.
- Hesperomys Darwinii.*  
(65) Gillis, Naval Astr. Exp., ii, p. 160.
- Hesperomys eremicus.*  
(76) P. R. R. Surv., vol. viii, p. 479; (86) U. S. and Mex. Bound. Surv., vol. ii, p. 44.
- Hesperomys Gambelii.*  
(76) P. R. R. Surv., vol. viii, p. 464; (97) P. R. R. Surv., vol. x, p. 82.
- Hesperomys gossypinus.*  
(76) P. R. R. Surv., vol. viii, p. 469.
- Hesperomys leucogaster.*  
(76) P. R. R. Surv., vol. viii, p. 490.
- Hesperomys leucopus.*  
(76) P. R. R. Surv., vol. viii, p. 468.
- Hesperomys longicaudatus.*  
(65) Gillis, Naval Astr. Exp., ii, p. 170.

- Hesperomys longipilis*.  
(65) Gillis, Naval Astr. Exp., ii, p. 160.
- Hesperomys intescens*.  
(65) Gillis, Naval Astr. Exp., ii, p. 170.
- Hesperomys michiganensis*.  
(76) P. R. R. Surv., vol. viii, p. 476.
- Hesperomys myoides*.  
(76) P. R. R. Surv., vol. viii, p. 472.
- Hesperomys Nuttalli*.  
(76) P. R. R. Surv., vol. viii, p. 467.
- Hesperomys palustris*.  
(76) P. R. R. Surv., vol. viii, p. 482, pl. iii, fig. 4;  
(101) Mammals of N. A., 1859. Skull, pl. iii, fig. 4.
- Hesperomys renggeri*.  
(65) Gillis, Naval Astr. Exp., ii, p. 160.
- Hesperomys ? rupestris*.  
(65) Gillis, Naval Astr. Exp., ii, p. 160.
- Hesperomys sonoriensis*.  
(76) P. R. R. Surv., vol. viii, p. 474; (86) Mex. Bound. Surv., vol. ii, p. 43.
- Hesperomys texanus*.  
(76) P. R. R. Surv., vol. viii, p. 464, pl. viii, fig. 1, pl. iii, fig. 5; (86) Mex. Bound. Surv., vol. ii, p. 43; (101) Mammals of N. A., 1859. Animal, pl. viii, fig. 1; skull, pl. iii, fig. 5.
- Hesperomys xanthorhinus*.  
(65) Gillis, Naval Astr. Exp., ii, p. 160.
- Jaculus hudsonius*.  
(76) P. R. R. Surv., vol. viii, p. 430, pl. xxi, fig. 5; (86) P. R. R. Surv., vol. x, p. 8; (101) Mammals of N. A., 1859. Details, pl. xxi, fig. 5.
- Lepidomys crinitiger*.  
(65) Gillis, Naval Astr. Exp., ii, p. 167.
- Lepidomys Cuvieri*.  
(64) Gillis, Naval Astr. Exp., ii, p. 156; (65) Gillis, Naval Astr. Exp., ii, p. 167.
- Lepidomys pallipes*.  
(65) Gillis, Naval Astr. Exp., ii, p. 167.
- Lagomys princeps*.  
(76) P. R. R. Surv., vol. viii, p. 619.
- Lepus americanus*.  
(76) P. R. R. Surv., vol. viii, p. 579.
- Lepus aquaticus*.  
(76) P. R. R. Surv., vol. viii, p. 612, pl. lix, fig. 1;  
(101) Mammals of N. A., 1859. Skull, pl. lix, fig. 1.
- Lepus artemesia*.  
(76) P. R. R. Surv., vol. viii, p. 602; (86) Mex. Bound. Surv., vol. ii, p. 48, pl. xxv, fig. 2;  
(101) Mammals of N. A., 1859. Skull, pl. lxxxv, fig. 2.
- Lepus arizonae*.  
(76) P. R. R. Surv., vol. viii, p. 606, pl. xlii, lviii, fig. 2; (101) Mammals of N. A., 1859. Animal, pl. xlii; skull, pl. lviii, fig. 2.
- Lepus bechmani*.  
(76) P. R. R. Surv., vol. viii, p. 606; (86) Mex. Bound. Surv., vol. ii, p. 48.
- Lepus californicus*.  
(76) P. R. R. Surv., vol. viii, p. 594, pl. lvii, fig. 2;  
(86) Mex. Bound. Surv., vol. ii, p. 47; (101) Mammals of N. A., 1859. Skull, pl. lvii, fig. 2.
- LEPUS CALLOTIS*.  
(76) P. R. R. Surv., vol. viii, p. 585, pl. lvii, fig. 1;  
(86) Mex. Bound. Surv., vol. ii, p. 45, pl. xxv, fig. 1; (101) Mammals of N. A., 1859. Skull, pl. lvii, fig. 1.
- LEPUS CALLOTIS FLAVIGULARIS*.  
(101) Mammals of N. A., 1859. Skull, pl. lxxxv, fig. 1.
- LEPUS CAMPESTRIS*.  
(76) P. R. R. Surv., vol. viii, p. 585, pl. lvi, fig. 2;  
(101) Mammals of N. A., 1859. Skull, pl. lvi, fig. 2.
- LEPUS GLACIALIS*.  
(76) P. R. R. Surv., vol. viii, p. 577, pl. lvi, fig. 1;  
(101) Mammals of N. A., 1859. Skull, pl. lvi, fig. 1.
- Lepus Nuttalli*.  
(76) P. R. R. Surv., vol. viii, p. 617.
- LEPUS PALUSTRIS*.  
(76) P. R. R. Surv., vol. viii, p. 615, pl. lix, fig. 2; (101) Mammals of N. A., 1859. Skull, pl. lix, fig. 2.
- LEPUS SYLVATICUS*.  
(76) P. R. R. Surv., vol. viii, p. 597, pl. lviii, fig. 1; (86) Mex. Bound. Surv., vol. ii, p. 47;  
(101) Mammals of N. A., 1859. Skull, pl. lviii, fig. 1.
- Lepus texianus*.  
(76) P. R. R. Surv., vol. viii, p. 617.
- Lepus Trowbridgii*.  
(60) Pr. Ac. Nat. Sci. Phila., 1854, p. 333; (76) P. R. R. Surv., vol. viii, p. 610, pl. xiv; (101) Mammals of N. A., 1859. Animal, pl. xiv.
- LEPUS WASHINGTONII*.  
(60) Pr. Ac. Nat. Sci. Phila., 1854, p. 333; (76) P. R. R. Surv., vol. viii, p. 583, pl. xv; (101) Mammals of N. A., 1859. Animal, pl. xv.
- Lutra haidobria*.  
(65) Gillis, Naval Astr. Exp., ii, p. 165.
- LUTRA CALIFORNICA*.  
(76) P. R. R. Surv., vol. viii, p. 187, pl. xix, fig. 8; (101) Mammals of N. A., 1859. Details, pl. xix, fig. 8.
- LUTRA CANADENSIS*.  
(76) P. R. R. Surv., vol. viii, p. 184, pl. xix, fig. 7; pl. xxxviii; (101) Mammals of N. A., 1859. Details, pl. xix, fig. 7. Skull, pl. xxxviii.
- Lutra felina*.  
(65) Gillis, Naval Astr. Exp., ii, p. 165.
- Lynx canadensis*.  
(76) P. R. R. Surv., vol. viii, p. 99.
- LYNX FASCIATUS*.  
(76) P. R. R. Surv., vol. viii, p. 96, pl. ii, fig. 1;  
(101) Mammals of N. A., 1859. Animal, pl. ii, fig. 1.
- LYNX MACULATUS*.  
(101) Mammals of N. A., 1859. Skull, adult, pl. lxxv, fig. 1; young, pl. lxxv, fig. 2.
- Lynx rufus*.  
(76) P. R. R. Surv., vol. viii, p. 90; (86) Mex. Bound. Surv., vol. ii, p. 13.
- LYNX RUPESTRIS*.  
(76) P. R. R. Surv., vol. viii, p. 93; (86) Mex. Bound. Surv., vol. ii, p. 13, pl. xv, figg. 1, 2;  
(97) P. R. R. Surv., vol. x, p. 81.

- Macrorhinus leoninus*.  
(65) Gillis, Naval Astr. Exp., ii, p. 166.
- MACROTUS CALIFORNICA**.  
(86) Mex. Bound. Surv., vol. ii, p. 4, pl. 1, fig. 2.
- MACROTUS CALIFORNICUS**.  
(82) Pr. Ac. Nat. Sci. Phila., 1858, p. 116;  
(101) Mammals of N. A., 1859. Animal, pl. lxi, fig. 2.
- Meles labradoria*.  
(29) Stansbury's Surv. Salt Lake [App. C], p. 311.
- MEPHITIS BICOLOR**.  
(76) P. R. R. Surv., vol. viii, p. 197, pl. xxix, lx, fig. 3; (86) Mex. Bound. Surv., vol. ii, p. 321, pl. xvii; (101) Mammals of N. A., 1859. Animal, pl. xxix; skull, pl. lx, fig. 3, pl. lxxvii, fig. 3.
- Mephitis chilensis*.  
(65) Gillis, Naval Astr. Exp., ii, p. 166.
- MEPHITIS MEPHITICA**.  
(76) P. R. R. Surv., vol. viii, p. 195, pl. lx, fig. 2;  
(101) Mammals of N. A., 1859, pl. lx, fig. 1.
- MEPHITIS MESOLEUCA**.  
(76) P. R. R. Surv., vol. viii, p. 192, pl. xix, fig. 1, pl. xxxix; (86) Mex. Bound. Surv., vol. ii, p. 19; (101) Mammals of N. A., 1859. Details, pl. xix, fig. 1; skull, pl. xxxix, fig. 3.
- Mephitis mesomelas*.  
(76) P. R. R. Surv., vol. viii, p. 199.
- Mephitis molinae*.  
(65) Gillis, Naval Astr. Exp., ii, p. 166.
- Mephitis occidentalis*.  
(76) P. R. R. Surv., vol. viii, p. 194.
- Mephitis patagonica*.  
(65) Gillis, Naval Astr. Exp., ii, p. 166.
- MEPHITIS VARIANS**.  
(76) P. R. R. Surv., vol. viii, p. 193, pl. lx, fig. 2;  
(86) Mex. Bound. Surv., vol. ii, p. 19; (101) Mammals of N. A., 1859. Skull, pl. lx, fig. 2.
- Mus decumanus*.  
(76) P. R. R. Surv., vol. viii, p. 438.
- Mus musculus*.  
(76) P. R. R. Surv., vol. viii, p. 443.
- Mus rattus*.  
(76) P. R. R. Surv., vol. viii, p. 439.
- MUS TECTORUM**.  
(76) P. R. R. Surv., vol. viii, p. 441, pl. lii, fig. 6; (86) Mex. Bound. Surv., vol. ii, p. 42; (101) Mammals of N. A., 1859. Skull, pl. liii, fig. 6.
- MUSTELA AMERICANA**.  
(76) P. R. R. Surv., vol. viii, p. 152, pl. xxxvi, fig. 2, pl. xxxvii, fig. 1; (101) Mammals of N. A., 1859. Skull, pl. xxxvi, fig. 2, and pl. xxxvii, fig. 1.
- MUSTELA PENNANTII**.  
(76) P. R. R. Surv., vol. viii, p. 149, pl. xxxvi, fig. 1; (101) Mammals of N. A., 1859. Skull and gum folds, pl. xxxvi, fig. 1.
- Myodes Cooperii*.  
(76) P. R. R. Surv., vol. viii, p. 558.
- Myodes obsoletus*.  
(76) P. R. R. Surv., vol. viii, p. 559.
- Myodes torquatus*.  
(76) P. R. R. Surv., vol. viii, p. 558.
- Myopotamus coypus*.  
(64) Gillis, Naval Astr. Exp., ii, p. 197; (86) *Ibid.*, p. 169.
- NEOSOREX NAVIGATOR**.  
(76) P. R. R. Surv., vol. viii, p. 11, pl. xxi;  
(101) Mammals of N. A., 1859. Animal and skull, pl. xxvi, No. 629.
- NEOTOMA CINEREA**.  
(76) P. R. R. Surv., vol. viii, p. 499, pl. liii, fig. 5, pl. liv, No. 1694; (101) Mammals of N. A., 1859. Skull, pl. liii, fig. 5; teeth, pl. liv, No. 1694.
- NEOTOMA FLORIDANA**.  
(76) P. R. R. Surv., vol. viii, p. 487, pl. liii, fig. 1;  
(101) Mammals of N. A., 1859. Skull, pl. liii, fig. 2.
- NEOTOMA FUSCIPES**.  
(76) P. R. R. Surv., vol. viii, p. 495, pl. liii, fig. 1, pl. liv, No. 936; (101) Mammals of N. A., 1859. Skull, pl. liii, fig. 1; teeth, pl. liv, No. 936.
- NEOTOMA MAGISTER**.  
(76) P. R. R. Surv., vol. viii, p. 499, pl. liii, fig. 4; (101) Mammals of N. A., 1859. Lower jaw, pl. liii, fig. 4.
- NEOTOMA MEXICANA**.  
(59) Pr. Ac. Nat. Sci. Phila., 1854, p. 333; (76) P. R. R. Surv., vol. viii, p. 499, pl. liv; (86) Mex. Bound. Surv., vol. ii, p. 44, pl. x, fig. 1, pl. xxiv, fig. 1; (101) Mammals of N. A., 1859. Teeth, pl. liv; details, pl. lxx, fig. 1; skull, pl. lxxxiv.
- NEOTOMA MICROPS**.  
(59) Pr. Ac. Nat. Sci. Phila., 1854, p. 333; (76) P. R. R. Surv., vol. viii, p. 493; (86) U.S. and Mex. Bound. Surv., vol. ii, p. 44, pl. xxiv, fig. 2; (101) Mammals of N. A., 1859. Skull, pl. lxxxiv, fig. 2.
- NEOTOMA OCCIDENTALIS**.  
(60) Pr. Ac. Nat. Sci. Phila., 1854, p. 335; (76) P. R. R. Surv., vol. viii, p. 496, pl. ix, fig. 2, pl. xxi, fig. 4, pl. liii, fig. 3; (101) Mammals of N. A., 1859. Animal, pl. ix, fig. 2; details, pl. xxi, fig. 4; skull, pl. liii, fig. 3.
- Nycticejus macrotis*.  
(65) Gillis, Naval Astr. Exp., ii, p. 163.
- Nycticejus varius*.  
(65) Gillis, Naval Astr. Exp., ii, p. 163.
- Octodon birdgei*.  
(65) Gillis, Naval Astr. Exp., ii, p. 168.
- Octodon degus*.  
(65) Gillis, Naval Astr. Exp., ii, p. 168.
- Otaria flavescens*.  
(65) Gillis, Naval Astr. Exp., ii, p. 166.
- Otaria jubata*.  
(65) Gillis, Naval Astr. Exp., ii, p. 166.
- Otaria porcina*.  
[*Otaria urarina*.]  
(65) Gillis, Naval Astr. Exp., ii, p. 166.
- OVIOS MOSCHATUS**.  
(22) Rep. of Comm. of Patents for 1851, p. 121, pl. vii, fig. 1; (76) P. R. R. Surv., vol. viii, p. 680, fig. 33, p. 681; (101) Mammals of N. A., 1859. Muzzle, wood-cut, fig. 33, p. 681.



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- (22) *Rep. of Comm. of Patents* for 1851, p. 123, pl. 3; (29) *Stansbury's Sur. Salt Lake* [App. C], p. 312; (76) *P. R. R. Surv.*, vol. viii, p. 673, figg. 24, 25, p. 674, figg. 26, 29, p. 675, figg. 30, 32, p. 677; (101) *Mammals of N. A.*, 1859. Muzzle and hoof, wood-cut, figg. 24, 25, p. 674; horns, male and female, wood-cut, figg. 26-29, p. 675; horns of male, figg. 30-32, p. 675.

*Oxymycterus megalonyx*.

- (65) *Gillia, Naval Astr. Exp.*, ii, p. 169.

*Oxymycterus scalops*.

- (65) *Gillia, Naval Astr. Exp.*, ii, p. 169.

*Perognathus fasciatus*.

- (76) *P. R. R. Surv.*, vol. viii, p. 420.

*PEROGNATHUS FLAVUS*.

- (50) *Pr. Ac. Nat. Sci. Phila.*, 1854, p. 334.

- (76) *P. R. R. Surv.*, vol. viii, p. 423, pl. viii, fig. 2, pl. xxi, fig. 3; (86) *Mex. Bound. Surv.*, vol. ii, p. 42, pl. x, figg. 4, 5; (93) *P. R. R. Surv.*, vol. x, p. 8.

- (101) *Mammals of N. A.*, 1859, p. 423. Animal, pl. viii, fig. 2; details, pl. xxi, fig. 3, and pl. lxx, figg. 4 and 5.

*PEROGNATHUS HISPIDUS*.

- (76) *P. R. R. Surv.*, vol. viii, p. 421, pl. li, fig. 4; (86) *U. S. and Mex. Bound. Surv.*, vol. ii, p. 42, pl. ix, fig. 2, pl. xxiii, fig. 6; (101) *Mammals of N. A.*, 1859. Skull, pl. li, fig. 4, and pl. lxxviii, fig. 6. Animal, pl. lxxix, fig. 2.

*PEROGNATHUS MONTICOLA*.

- (76) *P. R. R. Surv.*, vol. viii, p. 422, pl. li, fig. 3; (101) *Mammals of N. A.*, 1859. Skull, pl. li, fig. 3.

*Perognathus parvus*.

- (76) *P. R. R. Surv.*, vol. viii, p. 425; (97) *Ibid.* vol. x, p. 82.

*PEROGNATHUS PENICILLATUS*.

- (76) *P. R. R. Surv.*, vol. viii, p. 418, pl. xx, fig. 5; (86) *Mex. Bound. Surv.*, vol. ii, p. 42; (101) *Mammals of N. A.*, 1859. Details, pl. xx, fig. 5.

*Physter macrocephalus*.

- (65) *Gillia, Naval Astr. Exp.*, ii, p. 171.

*Putorius erminea*.

- (29) *Stansbury's Sur. Salt Lake* [App. C], p. 311.

*Putorius vison*.

- (29) *Stansbury's Sur. Salt Lake* [App. C], p. 311.

*PROCYON HERMANDESI*.

- (76) *P. R. R. Surv.*, vol. viii, p. 212, pl. xl; (86) *Mex. Bound. Surv.*, vol. ii, p. 22, pl. xviii; (101) *Mammals of N. Amer.*, 1859. Skull, rather young, pl. ix; adult, pl. lxxvii.

*Procyon Hernandezii mexicana*.

- (76) *P. R. R. Surv.*, vol. viii, p. 215; (86) *Mex. Bound. Surv.*, vol. ii, p. 22.

*Procyon lotor*.

- (76) *P. R. R. Surv.*, vol. viii, p. 209.

*Procyon paucis*.

- (76) *P. R. R. Surv.*, vol. viii, p. 215.

*Perodactylus castanops*.

- (29) *Stansbury's Sur. Salt Lake* [App. C], p. 312.

*Pteromys alpinus*.

- (76) *P. R. R. Surv.*, vol. viii, p. 289.

*Pteromys Hudsonius*.

- (76) *P. R. R. Surv.*, vol. viii, p. 288.

*Pteromys oregonensis*.

- (76) *P. R. R. Surv.*, vol. viii, p. 290.

*Pteromys volucella*.

- (76) *P. R. R. Surv.*, vol. viii, p. 286.

*PUTORIUS CICOGNANTII*.

- (76) *P. R. R. Surv.*, vol. viii, p. 161, pl. xix, fig. 4; (101) *Mammals of N. A.*, 1859. Details, pl. xix, fig. 4.

*PUTORIUS FRENATUS*.

- (76) *P. R. R. Surv.*, vol. viii, p. 173, pl. xix, fig. 5; (86) *Mex. Bound. Surv.*, vol. ii, p. 19, pl. ii, fig. 2, pl. xvii, figg. 1, 2; (101) *Mammals of N. A.*, 1859. Details, pl. xix, fig. 5; details of young, pl. lxii, fig. 2; skull of adult, pl. lxxvii, fig. 1; of young, fig. 2.

*Putorius Kanell*.

- (76) *P. R. R. Surv.*, vol. viii, p. 172.

*Putorius longicauda*.

- (76) *P. R. R. Surv.*, vol. viii, p. 169.

*Putorius nigrescens*.

- (76) *P. R. R. Surv.*, vol. viii, p. 180.

*Putorius nigriceps*.

- (76) *P. R. R. Surv.*, vol. viii, p. 180.

*PUTORIUS NOVEBORACENSIS*.

- (76) *P. R. R. Surv.*, vol. viii, p. 166, pl. xxxvi, fig. 3; (101) *Mammals of N. A.*, 1859. Skull, pl. xxxvi, fig. 3.

*Putorius pusillus*.

- (76) *P. R. R. Surv.*, vol. viii, p. 159.

*PUTORIUS RICHARDSONII*.

- (76) *P. R. R. Surv.*, vol. viii, p. 164, pl. xix, figg. 2-6; (101) *Mammals of N. A.*, 1859. Details, pl. xix, figg. 2-6.

*PUTORIUS VISON*.

- (76) *P. R. R. Surv.*, vol. viii, p. 177, pl. xxxvii, figg. 2, 3; (101) *Mammals of N. A.*, 1859. Skull, pl. xxxvii, fig. 2, adult, fig. 3, young.

*PUTORIUS XANTHOGENYS*.

- (76) *P. R. R. Surv.*, vol. viii, p. 176, pl. iii, fig. 1; (101) *Mammals of N. A.*, 1859. Animal, pl. iii, fig. 1. Details, pl. xix, fig. 3.

*RANGIFER CARIBOU*.

- (76) *P. R. R. Surv.*, vol. viii, p. 633, figg. 3, 4, 5, 6, p. 634; (101) *Mammals of N. A.*, 1859. Horns, adult, wood-cut, fig. 3; young, figg. 4, 5, 6, p. 634.

*RANGIFER GROENLANDICUS*.

- (76) *P. R. R. Surv.*, vol. viii, p. 634, figg. 7, 8, p. 635; (101) *Mammals of N. A.*, 1859. Horns, adult, male, wood-cut, fig. 7; adult, female, fig. 8, p. 635.

*Reithrodon carolinensis*.

- (76) *P. R. R. Surv.*, vol. viii, p. 452.

*Reithrodon chinchilloides*.

- (65) *Gillia, Naval Astr. Exp.*, ii, p. 170.

*Reithrodon humilis*.

- (76) *P. R. R. Surv.*, vol. viii, p. 448.

*Reithrodon longicauda*.

- (76) *P. R. R. Surv.*, vol. viii, p. 451.

*REITHRODON*.

- (101) *Mammals of N. A.*, 1859, p. 451. Details, pl. lxvii, fig. 4, and pl. lxx, fig. 6.

**REITHRODON MEGALOTIS.**

- (76) P. R. R. Surv., vol. viii, p. 451; (86) U. S. and Mex. Bound. Surv., vol. ii, p. 43, pl. vii, fig. 4, pl. x, fig. 6, pl. xxiv, fig. 4; (101) Mammals of N. A., 1859. Skull, pl. lxxxiv, fig. 4.

**REITHRODON MONTANUS.**

- (60) Pr. Ac. Nat. Sci. Phila., 1854, p. 335; (76) P. R. R. Surv., vol. viii, p. 449, pl. liv, No. 1306; (93) *Ibid.*, v., vol. x, p. 9; (101) Mammals of N. A., 1859. Teeth, pl. liv, No. 1306.

**SCALOPE AQUATICUS.**

- (76) P. R. R. Surv., vol. viii, p. 60, pl. xvii, fig. 1; (101) Mammals of N. A., 1859. Details of external form, pl. xvii, fig. 1.

**Scalops argentatus.**

- (76) P. R. R. Surv., vol. viii, p. 63.

**SCALOPE BREWERI.**

- (76) P. R. R. Surv., vol. viii, p. 68, pl. xvii, xxx; (101) Mammals of N. A., 1859. Details of external form, pl. xvii, figs. 3, 4, pl. xxx, fig. 2.

**Scalops latimanus.**

- (76) P. R. R. Surv., vol. viii, p. 65.

**SCALOPE TOWNSENDII.**

- (76) P. R. R. Surv., vol. viii, p. 65, pl. xvii, xxx; (101) Mammals of N. A., 1859. Details of external form, pl. xvii, fig. 5, pl. xxx, fig. 1.

**SCALOPE TOWNSENDII CALIFORNICUS.**

- (76) P. R. R. Surv., vol. viii, p. 65, pl. xvii, xxx; (101) Mammals of N. A., 1859. Details of external form, pl. xvii, figs. 2, 6, pl. xxx, fig. 3.

**Schizodon fuscus.**

- (65) Gillis. Naval Astr. Exp., ii, p. 168.

**Sciurus Aberti.**

- (76) P. R. R. Surv., vol. viii, p. 267.

**SCIURUS CAROLINENSIS.**

- (76) P. R. R. Surv., vol. viii, p. 256, pl. xlv, fig. 2; (101) Mammals of N. A., 1859. Skull, pl. xlv, fig. 2.

**Sciurus carolinensis mexicanus.**

- (76) P. R. R. Surv., vol. viii, p. 263.

**Sciurus castaneus.**

- (59) Pr. Ac. Nat. Sci. Phila., 1854, p. 334.

**SCIURUS CARTAXONOTUS.**

- (76) P. R. R. Surv. vol. viii, p. 266; (86) Mex. Bound. Surv. vol. ii, p. 35, pl. v, xxi, fig. 2; (101) Mammals of N. A., 1859. Animal, pl. lxxv; skull.

**SCIURUS CINEREUS.**

- (76) P. R. R. Surv., vol. viii, p. 248, pl. xlviii, fig. 2; (101) Mammals of N. A., 1859. Skull, pl. xlviii, fig. 2.

**Sciurus Collieti.**

- (76) P. R. R. Surv., vol. viii, p. 280.

**SCIURUS DOUGLASSII.**

- (76) P. R. R. Surv., vol. viii, p. 275, pl. xx, fig. 1, pl. xiv, fig. 3; (101) Mammals of N. A., 1859. Details, pl. xx, fig. 1; skull, pl. xiv, fig. 3.

**SCIURUS DOUGLASSII SUCKLEYI.**

- (76) P. R. R. Surv., vol. viii, p. 275, pl. vii; (101) Mammals of N. A., 1859. Animal, pl. vii.

**Sciurus ferruginiventris.**

- (76) P. R. R. Surv., vol. viii, p. 261.

**Sciurus fessor.**

- (76) P. R. R. Surv., vol. viii, p. 264; (97) *Ibid.*, vol. x, p. 81.

**SCIURUS FREMONTII.**

- (76) P. R. R. Surv., vol. viii, p. 272, pl. vi; (60) *Ibid.*, vol. x, p. 7, pl. xi; (101) Mammals of N. A., 1859. Animal, pl. vi.

**SCIURUS HUDSONIUS.**

- (76) P. R. R. Surv., vol. viii, p. 266, pl. xvi, fig. 1; (101) Mammals of N. A., 1859. Skull, pl. xvi, fig. 1.

**Sciurus lanigerus.**

- (76) P. R. R. Surv., vol. viii, p. 260.

**Sciurus leporinus.**

- (76) P. R. R. Surv., vol. viii, p. 260.

**SCIURUS LIMITIS.**

- (50) Pr. Ac. Nat. Sci. Phila. 1854, p. 334; (76) P. R. R. Surv. vol. viii, p. 256; (86) Mex. Bound. Surv., vol. ii, p. 34, pl. iv, xxi, fig. 1; (101) Mammals of N. A., 1859. Animal, pl. lxiv; skull, pl. lxxxi, fig. 1.

**Sciurus ludovicianus.**

- (76) P. R. R. Surv., vol. viii, p. 251; (86) Mex. Bound. Surv., vol. ii, p. 35.

**Sciurus mustelinus.**

- (76) P. R. R. Surv., vol. viii, p. 280.

**Sciurus nigrescens.**

- (76) P. R. R. Surv., vol. viii, p. 260.

**Sciurus richardsonii.**

- (76) P. R. R. Surv., vol. viii, p. 273.

**Sciurus Suckleyi.**

- (60) Pr. Ac. Nat. Sci. Phila., 1854, p. 333.

**Sciurus vulpinus.**

- (76) P. R. R. Surv., vol. viii, p. 246.

**SIGMODON BERLANDIERI.**

- (59) Pr. Ac. Nat. Sci. Phila., 1854, p. 333.  
(76) P. R. R. Surv., vol. viii, p. 504, pl. liii, fig. 6, 7; (86) Mex. Bound. Surv., vol. ii, p. 44, pl. vi, fig. 2, pl. x, fig. 2; (101) Mammals of N. A., 1859. Skull, pl. liii, figs. 6, 7, pl. lxxxi, fig. 3; animal, pl. lxvi, fig. 2; details, pl. lxx, fig. 2.

**Sigmodon hispidus.**

- (76) P. R. R. Surv., vol. viii, p. 502.

**SOREX COOPERI.**

- (76) P. R. R. Surv., vol. viii, p. 37, pl. xxvi; (101) Mammals of N. A., 1859. Animal and skull, pl. xxvi, No. 2047.

**Sorex flumbripes.**

- (76) P. R. R. Surv., vol. viii, p. 55.

**SOREX FORSTERI.**

- (76) P. R. R. Surv., vol. viii, p. 22; pl. xxi, fig. 4; (101) Mammals of N. A., 1859. Details, pl. xxx, fig. 4.

**Sorex Harlani.**

- (76) P. R. R. Surv., vol. viii, p. 56.

**SOREX HAYDENI.**

- (76) P. R. R. Surv., vol. viii, p. 29, pl. xxvii; (101) Mammals of N. A., 1859. Animal and skull, pl. xxvii, No. 1685.

**SOREX HOYI.**

- (76) P. R. R. Surv., vol. viii, p. 32, pl. xxviii; (101) Mammals of N. A., 1859. Animal and skull, pl. xxviii, No. 1688.

**Sorex pachyura.**

(101) *Mammals of N. A.*, 1859. Animal and skull, pl. xxvii, No. 1674; (76) *P. R. R. Surv.*, vol. viii, p. 20, pl. xxvii.

**Sorex palustris.**

(76) *P. R. R. Surv.*, vol. viii, p. 56.

**Sorex parvus.**

(76) *P. R. R. Surv.*, vol. viii, p. 56.

**Sorex personatus.**

(76) *P. R. R. Surv.*, vol. viii, p. 20.

**Sorex flatterhinus.**

(76) *P. R. R. Surv.*, vol. viii, p. 25, pl. xxviii; (101) *Mammals of N. A.*, 1859. Animal and skull, pl. xxviii, No. 1699.

**Sorex richardsonii.**

(76) *P. R. R. Surv.*, vol. viii, p. 24.

**Sorex suckleyi.**

(76) *P. R. R. Surv.*, vol. viii, p. 18, pl. xxvii; (101) *Mammals of N. A.*, 1859. Animal and skull, pl. xxvii, No. 1677.

**Sorex thompsoni.**

(76) *P. R. R. Surv.*, vol. viii, p. 34, pl. xxvii; (101) *Mammals of N. A.*, 1859. Animal and skull, pl. xxvii, No. 1686.

**Sorex thomomidi.**

(76) *P. R. R. Surv.*, vol. viii, p. 13, pl. xxvi; (101) *Mammals of N. A.*, 1859. Animal and skull, pl. xxvi.

**Sorex vagrans.**

(76) *P. R. R. Surv.*, vol. viii, p. 15, pl. xviii, figs. 5, 6, pl. xxvi; (101) *Mammals of N. A.*, 1859. Details of external form, pl. xviii, figs. 5, 6; animal and skull, pl. xxvi, No. 1675.

**Spalacopus poeppigii.**

(64) *Gillies, Naval Astr. Exp.*, ii, p. 157; (65) *Ibid.*, ii, p. 168.

**Spermophilus beecheyi.**

(60) *Pr. Ac. Nat. Sci. Phila.*, 1854, p. 334; (76) *P. R. R. Surv.*, vol. viii, p. 307, pl. iii, fig. 2, pl. xvi, fig. 3; (97) *Ibid.*, vol. x, p. 81; (101) *Mammals of N. A.*, 1859. Animal, pl. iii, fig. 2; skull, pl. xvi, fig. 3.

**Spermophilus couchii.**

(59) *Pr. Ac. Nat. Sci. Phila.*, 1854, p. 334; (76) *P. R. R. Surv.*, vol. viii, p. 311; (86) *Mex. Bound. Surv.*, vol. ii, p. 38, pl. xxi, fig. 3; (101) *Mammals of N. A.*, 1859. Skull, pl. lxxxi, fig. 3.

**Spermophilus douglasii.**

(76) *P. R. R. Surv.*, vol. viii, p. 309, pl. xlv, fig. 1; (101) *Mammals of N. A.*, 1859. Skull, pl. xlv, fig. 1.

**Spermophilus franklini.**

(76) *P. R. R. Surv.*, vol. viii, p. 314, pl. lxvi, fig. 4; (101) *Mammals of N. A.*, 1859. Skull, pl. lxvi, fig. 4.

**Spermophilus grammurus.**

(101) *Mammals of N. A.*, Animal, pl. iv, fig. 1; details, pl. lxvii, fig. 1; skull, pl. lxxxii, fig. 2.

**Spermophilus grammurus.**

(60) *Pr. Ac. Nat. Sci. Phila.*, 1854, p. 334; (76) *P. R. R. Surv.*, vol. viii, p. 310, pl. iv, fig. 1; (86) *Mex. Bound. Surv.*, vol. ii, p. 38, pl. vii, fig. 1, pl. xxii, fig. 1.

**Spermophilus gunnisoni.**

(60) *Pr. Ac. Nat. Sci. Phila.*, 1854, p. 334.

**Spermophilus harrisi.**

(76) *P. R. R. Surv.*, vol. viii, p. 313, pl. xlviii, fig. 3; (97) *Ibid.*, vol. x, p. 82; (101) *Mammals of N. A.*, 1859. Skull, pl. xlviii, fig. 3.

**Spermophilus lateralis.**

(76) *P. R. R. Surv.*, vol. viii, p. 312, pl. xx, fig. 3; pl. lxx, fig. 5; (101) *Mammals of N. A.*, 1859. Details, pl. xx, fig. 3; skull, pl. xiv, fig. 5.

**Spermophilus macrourus.**

(76) *P. R. R. Surv.*, vol. viii, p. 327.

**Spermophilus mexicanus.**

(76) *P. R. R. Surv.*, vol. viii, p. 319; (86) *Mex. Bound. Surv.*, vol. ii, p. 39, pl. xxii, fig. 2; (101) *Mammals of N. A.*, 1859. Skull, pl. lxxxii, fig. 2.

**Spermophilus parryi.**

(76) *P. R. R. Surv.*, vol. viii, p. 323.

**Spermophilus richardsonii.**

(76) *P. R. R. Surv.*, vol. viii, p. 325.

**Spermophilus spilosoma.**

(59) *Pr. Ac. Nat. Sci. Phila.*, 1854, p. 334; (76) *P. R. R. Surv.*, vol. viii, p. 321; (86) *Mex. Bound. Surv.*, vol. ii, p. 39, pl. vii, fig. 8, pl. xxii, fig. 3; (101) *Mammals of N. A.*, 1859. Details, pl. lxvii, fig. 3; skull, pl. lxxxix, fig. 3.

**Spermophilus tereticauda.**

(76) *P. R. R. Surv.*, vol. viii, p. 315; (86) *Mex. Bound. Surv.*, vol. ii, p. 38, pl. vii, fig. 2, pl. xxi, fig. 4; (101) *Mammals of N. A.*, 1859. Details, pl. lxvii, fig. 2; skull, pl. lxxxix, fig. 4.

**Spermophilus townsendi.**

(76) *P. R. R. Surv.*, vol. viii, p. 326.

**Spermophilus tridecemlineatus.**

(29) *Stansbury's Surv. Salt Lake [App. C]*, p. 312; (76) *P. R. R. Surv.*, vol. viii, p. 316.

**Stenoderma chilensis.**

(65) *Gillies, Naval Astr. Exp.*, ii, p. 163.

**Stenorhynchus leptonyx.**

(65) *Gillies, Naval Astr. Exp.*, ii, p. 166.

**Talpa europaea.**

(76) *P. R. R. Surv.*, vol. viii, p. 68, pl. xvii, fig. 7; (101) *Mammals of N. Amer.*, 1859. Muzzle, pl. xvii, fig. 7.

**Tamias cooperi.**

(60) *Pr. Ac. Nat. Sci. Phila.*, 1854, p. 334.

**Tamias townsendii cooperi.**

(76) *P. R. R. Surv.*, vol. viii, p. 301, pl. 6, fig. 2.

**Tamias dorsalis.**

(59) *Pr. Ac. Nat. Sci. Phila.*, 1854, p. 334; (76) *P. R. R. Surv.*, vol. viii, p. 300; (86) *Mex. Bound. Surv.*, vol. ii, p. 37, pl. 6, fig. 1; (101) *Mammals of N. A.*, 1859. Animal, pl. lxvi, fig. 1.

**Tamias quadrivittatus.**

(93) *P. R. R. Surv.*, vol. x, p. 7; (76) *Ibid.*, vol. viii, p. 297, pl. xx, fig. 2; (101) *Mammals of N. A.*, 1859. Details, pl. xx, fig. 2.

**Tamias striatus.**

(76) *P. R. R. Surv.*, vol. viii, p. 292, pl. xlvii, fig. 2; (101) *Mammals of N. A.*, 1859. Skull, pl. xlvii, fig. 2.

**TAMIAS TOWNSENDII.**

- (76) P. R. R. Surv., vol. viii, p. 301, pl. xlv, fig. 4; (101) Mammals of N. A., 1859. Skull, pl. xlv, fig. 4.

**TAMIAS TOWNSENDII COOPERI.**

- (101) Mammals of N. A., 1859. Animal, pl. v, fig. 2.

**TARANDUS ARCTICUS.**

- (22) Rep. of Comm. of Patents for 1851, p. 105, pl. 2.

**Tarandus furcifer.**

- (22) Rep. of Comm. of Patents for 1851, p. 109.

**Tarandus hastalis.**

- (22) Rep. of Comm. of Patents for 1851, p. 108.

**TAXIDEA AMERICANA.**

- (76) P. R. R. Surv., vol. viii, p. 202, pl. xxxix; (101) Mammals of N. A., 1859. Upper jaw, pl. xxxix, fig. 2.

**TAXIDEA BERLANDIERI.**

- (76) P. R. R. Surv., vol. viii, p. 205, pl. xxxix, fig. 7; (86) Mex. Bound. Surv., vol. ii, p. 321; (101) Mammals of N. A., 1859. Skull, pl. xxxix, fig. 7.

**THOMOMYS BOREALIS.**

- (76) P. R. R. Surv., vol. viii, p. 396, pl. xxii, fig. 2; (101) Mammals of N. A., 1859. Details, pl. xxii, fig. 2.

**Thomomys botte.**

- (60) Pr. Ac. Nat. Sci. Phila. 1854, p. 335.

**THOMOMYS BULBIVORUS.**

- (76) P. R. R. Surv., vol. viii, p. 389, pl. xli, l, fig. 3, pl. lii, fig. 1; (97) P. R. R. Surv., vol. x, p. 82.

**THOMOMYS BULBIVORUS.**

- (101) Mammals of N. A., 1859. Animal, with details of external form, pl. xi; skull, pl. l, fig. 3, pl. liii, fig. 1.

**Thomomys Douglassii.**

- (76) P. R. R. Surv., vol. viii, p. 394.

**THOMOMYS FULVUS.**

- (76) P. R. R. Surv., vol. viii, p. 402, pl. xli, fig. 2; (86) U. S. and Mex. Bound. Surv., vol. ii, p. 41; (101) Mammals of N. A., 1859. Animal, with details, pl. xii, fig. 2.

**THOMOMYS LATICEPS.**

- (60) Pr. Ac. Nat. Sci. Phila. 1854, p. 335; (76) P. R. R. Surv., vol. viii, p. 392, pl. xli, fig. 1; (101) Mammals of N. A., 1859. Animal, with details, pl. xii, fig. 1.

**THOMOMYS RUFESCENS.**

- (60) Pr. Ac. Nat. Sci. Phila., 1854, p. 335; (76) P. R. R. Surv., vol. viii, p. 397, pl. x, fig. 1; (86) P. R. R. Surv., vol. x, p. 8, pl. x, fig. 1; (101) Mammals of N. A., 1859. Animal, pl. x, fig. 1.

**Thomomys talpoides.**

- (76) P. R. R. Surv., vol. viii, p. 403.

**THOMOMYS UMBRINUS.**

- (60) Pr. Ac. Nat. Sci. Phila., 1854, 334; (76) P. R. R. Surv., vol. viii, p. 399; (86) U. S. and Mex. Bound. Surv., vol. ii, p. 4, pl. viii, x, fig. 1, pl. xxxiii, fig. 5; (101) Mammals of N. A., 1859. Animal and details, pl. lxviii; details, pl. lxx, fig. 1; skull, pl. lxxxiii, fig. 5.

**UROTRICHUS GIBBSII.**

- (76) P. R. R. Surv., vol. viii, p. 76, pl. xviii, fig. 3, pl. xxviii; (101) Mammals of N. A., 1859. Details of external form, pl. xvii, fig. 3; animal and skull, pl. xxviii, No. 62.

**URSUS AMERICANUS.**

- (76) P. R. R. Surv., vol. viii, p. 235, pl. xiii, figg. 1-9; (101) Mammals of N. A., 1859. Skull, pl. xliii, figg. 10-13.

**Ursus AMERICANUS cinnamomeus.**

- (76) P. R. R. Surv., vol. viii, p. 238.

**URSUS AECTOS.**

- (101) Mammals of N. A., 1859. Skull rather immature, pl. xliii, figg. 1-9.

**URSUS CINNAMOMEUS.**

- (86) Mex. Bound. Surv., vol. ii, p. 23, pl. xix; (101) Mammals of N. A., 1859. Skull, pl. lxxix.

**URSUS HORRIBILIS.**

- (76) P. R. R. Surv., vol. viii, p. 219, pl. xli, xlii; (101) Mammals of N. A., 1859. Skull very old, pl. xli; skull rather young, pl. xlii; (86) Mex. Bound. Surv., vol. ii, p. 24, pl. xx; (101) Mammals of N. A., 1859. Skull, pl. lxxx.

**URSUS MARITIMUS.**

- (76) P. R. R. Surv., vol. viii, p. 229, pl. xlv; (101) Mammals of N. A., 1859. Skull, pl. xlv.

**Vespertilio chilensis.**

- (65) Gilli. Naval Astr. Exp., ii, p. 163.

**VESPERTILIO PALLIDUS.**

- (86) Mex. Bound. Surv., vol. ii, p. 4, pl. 1, fig. 1; (97) P. R. R. Surv., vol. x, p. 81; (101) Mammals of N. A., 1859. Animal, pl. li, fig. 1.

**Vespertilio velatus.**

- (65) Gilli. Naval Astr. Exp., ii, p. 163.

**Vulpes fulvus argentatus.**

- (76) P. R. R. Surv., vol. viii, p. 126.

**Vulpes fulvus decussatus.**

- (76) P. R. R. Surv., vol. viii, p. 127.

**VULPES FULVUS FULVUS.**

- (76) P. R. R. Surv., vol. viii, p. 124, pl. xxxii; (101) Mammals of N. A., 1859. Skull, pl. xxxii.

**Vulpes lagopus.**

- (76) P. R. R. Surv., vol. viii, p. 137.

**VULPES LITORALIS.**

- (76) P. R. R. Surv., vol. viii, p. 143, pl. xxv, fig. 2; (101) Mammals of N. A., 1859. Animal, pl. i; skull, pl. xxxv, fig. 2.

**VULPES MACROURA.**(101) *Mammals of N. A.*, 1859. Skull, pl. xxxiii.**Valpes Macrourus.**(29) *Stansbury's Surv. Salt Lake* [App. C], p. 309; (76) *P. R. R. Surv.*, vol. viii, p. 130, pl. xxxiii.**Valpes Utah.**(24) *Fr. Ac. Nat. Sci. Phila.*, 1852-3 (1854), p. 124.**VULPES VELOX.**(76) *P. R. R. Surv.*, vol. viii, p. 133, pl. xxxiv; (101) *Mammals of N. A.*, 1859. Skull, pl. xxxiv.**VULPES VIRGINIANUS.**(76) *P. R. R. Surv.*, vol. viii, p. 138, pl. xxxv, fig. 1; (86) *Mex. Bound. Surv.*, vol. ii, p. 16; (101) *Mammals of N. A.*, 1859. Skull, pl. xxxv, fig. 1.

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**Agiethus canescens.**(78) *P. R. R. Surv.*, vol. ix, p. 429; (6324) *Birds of N. A.*, 1874, vol. i, p. 498, pl. xxii, fig. 2.**Agiethus FLAVIROSTRIS BREWSTER.**(6324) *Birds of N. A.*, 1874, vol. i, p. 501, pl. xxii, fig. 6.**Agiethus linaria.**(78) *P. R. R. Surv.*, vol. ix, p. 428.**Agiethus LINARIUS.**(6324) *Birds of N. A.*, 1874, vol. i, p. 498, pl. xxii, figg. 3, 5 (cuts, p. 491).**ÆALON LITHOFALCO COLUMBARIUS.**(6324) *Birds of N. A.*, 1874, vol. iii, p. 144 (cut, p. 146).**Æalon lithofalco Richardsoni.**(6324) *Birds of N. A.*, 1874, vol. iii, p. 148.**Æalon lithofalco Suckleyi.**(6324) *Birds of N. A.*, 1874, vol. iii, p. 147.**Aestrelata meridionalis.**(78) *P. R. R. Surv.*, vol. ix, p. 827.**Agelaius.**(6324) *Birds of N. A.*, 1874, vol. ii, p. 148.**Agelaius.**(6324) *Birds of N. A.*, 1874, vol. ii, p. 156.**Agelaius ———.**(99) *Pr. Ac. Nat. Sci. Phila.*, 1859, p. 305.**Agelaius gubernator.**(78) *P. R. R. Surv.*, vol. ix, p. 529; (87) *U. S. and Mex. Bound. Surv.*, vol. ii, p. 18.**AGELAIUS PHENICEUS.**(78) *P. R. R. Surv.*, vol. ix, p. 526; (87) *U. S. and Mex. Bound. Surv.*, vol. ii, p. 18; (6324) *Birds of N. A.*, 1874, vol. ii, p. 159, pl. xxxiii, figg. 1, 2, 3 (cuts, p. 158).**AGELAIUS PHENICEUS GUBERNATOR.**(6324) *Birds of N. A.*, 1874, vol. ii, p. 163, pl. xxxiii, figg. 4, 8.**Agelaius tricolor.**(78) *P. R. R. Surv.*, vol. ix, p. 530; (87) *U. S. and Mex. Bound. Surv.*, vol. ii, p. 18; (6324) *Birds of N. A.*, 1874, vol. ii, p. 165, pl. xxxiii, figg. 5, 6, 7.**Agelaius xanthocephalus.**(31a) *Stansbury's Surv. Salt Lake* [App. C], p. 326.**Agrodome Spraguei.**(32) *Stansbury's Surv. Salt Lake* [App. C], p. 329.**Aix aponas.**(78) *P. R. R. Surv.*, vol. ix, p. 785.**Alauda.**(6324) *Birds of N. A.*, 1874, vol. ii, p. 135.

**ALAUDA ARVENENS.**

(632½) Birds of N. A., 1874, vol. ii, p. 136, pl. xxxii, fig. 3.

**Alauda rufa.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**Alaudids.**

(632½) Birds of N. A., 1874, vol. ii, p. 135.

**Alca impennis.**

(78) P. R. R. Surv., vol. ix, p. 900.

**Alca torda.**

(78) P. R. R. Surv., vol. ix, p. 901.

**Alcedinids.**

(632½) Birds of N. A., 1874, vol. ii, p. 391.

**Ammodromus.**

(632½) Birds of N. A., 1874, vol. i, p. 556.

**AMMODROMUS CAUDACUTUS.**

(78) P. R. R. Surv., vol. ix, p. 453; (632½) Birds of N. A., 1874, vol. i, p. 557, pl. xxv, fig. 7 (cuts, pp. 556, 557).

**AMMODROMUS MARITIMUS.**

(78) P. R. R. Surv., vol. ix, p. 454; (632½) Birds of N. A., 1874, vol. i, p. 560, pl. xxv, fig. 8; (632½) Birds of N. A., 1874, App., p. 513.

**AMMODROMUS SAMUELIS.**

(78) P. R. R. Surv., vol. ix, p. 455; (88) Pr. Bost. Soc. Nat. Hist., 1858, p. 379; (104) Birds of N. A., 1860, p. 456, pl. lxxi, fig. 1.

**Ampelids.**

(115) Review of N. A. Birds, May, 1866, Part I, p. 322; *Ibid.* p. 400; (632½) Birds of N. A., 1874, vol. i, p. 395.

**Ampelina.**

(115) Review of N. A. Birds, May, 1866, Part I, p. 401; *Ibid.* p. 403; (632½) Birds of N. A., 1874, vol. i, p. 395.

**Ampella.**

(115) Review of N. A. Birds, May, 1866, Part I, p. 403; (632½) Birds of N. A., 1874, vol. i, p. 395.

**Ampellis cedrorum.**

(78) P. R. R. Surv., vol. ix, p. 318; (87) U. S. and Mex. Bound. Surv., vol. ii, p. 11; (115) Review of N. A. Birds, May, 1866, Part I, p. 407; (632½) Birds of N. A., 1874, vol. i, p. 401.

**Ampellis garrula.**

(115) Review of N. A. Birds, May, 1866, Part I, p. 403.

**AMPELIS GARRULUS.**

(78) P. R. R. Surv., vol. ix, p. 317; (632½) Birds of N. A., 1874, vol. i, p. 396, pl. xviii, fig. 1 (cut, p. 397).

**Anas boschas.**

(31) Stansbury's Surv. Salt Lake [App. C], p. 322; (78) P. R. R. Surv., vol. ix, p. 774; (87) U. S. and Mex. Bound. Surv., vol. ii, p. 26; (94) P. R. R. Surv., vol. x, p. 15.

**Anas europhasianus.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 334.

**Anas obecura.**

(78) P. R. R. Surv., vol. x, p. 775.

**Anorthura.**

(115) Review of N. A. Birds, Sept., 1864, Part I, p. 144.

**Anorthura hyemalis.**

(78) P. R. R. Surv., vol. ix, p. 369.

**Anous stolidus.**

(78) P. R. R. Surv., vol. ix, p. 365.

**Anser canadensis.**

(31) Stansbury's Surv. Salt Lake [A], p. 321.

**Anser cygnoides.**

(78) P. R. R. Surv., vol. ix, p. 761.

**Anser erythropus.**

(31) Stansbury's Surv. Salt Lake [A], p. 321.

**Anser frontalis.**

(78) P. R. R. Surv., vol. ix, p. 762.

**Anser (Anser) Gambelli.**

(78) P. R. R. Surv., vol. ix, p. 761.

**Anser Gambelli.**

(87) Mex. Bound. Surv., vol. ii, p. 26.

**Anser hyperboreus.**

(78) P. R. R. Surv., vol. ix, p. 760.

**Anser nigricans.**

(32) Stansbury's Surv. Salt Lake [A], p. 334.

**Anthus.**

(632½) Birds of N. A., 1874, vol. i, p. 169.

**Anthus.**

(115) Review of N. A. Birds, Aug., 1864, I, p. 151; *Ibid.*, p. 152; *Ibid.*, Oct., 1864, I, p. 158.

**Anthus.**

(115) Review of N. A. Birds, Aug., 1864, I, p. 158.

**Anthus.**

(632½) Birds of N. A., 1874, vol. i, p. 170.

**Anthus bogotensis.**

(115) Review of N. A. Birds, Aug., 1864, I, p. 157.

**ANTHUS LUDOVICIANUS.**

(78) P. R. R. Surv., vol. ix, p. 232; (8) Bound. Surv., vol. ii, p. 10; (115) Review of N. A. Birds, Aug., 1864, Part I, (632½) Birds of N. A., 1874, vol. i, p. 171, fig. 3 (cuts, pp. 170, 171); *Ibid.*, App.

**ANTHUS PRATENSIS.**

(115) Review of N. A. Birds, Aug., 1864, p. 155; (632½) Birds of N. A., 1874, p. 173, pl. x, fig. 4.

**Anthus rufus.**

(115) Review of N. A. Birds, Aug., 1864, I, p. 154.

**Anthus Spraguei.**

(115) Review of N. A. Birds, Aug., 1864, I, p. 155.

**Antrostomus.**

(632½) Birds of N. A., 1874, vol. ii, p. 4.

**ANTROSTOMUS CAROLINENSIS.**

(78) P. R. R. Surv., vol. ix, p. 147; (632½) Birds of N. A., 1874, vol. ii, p. 410, pl. xi (cut, p. 410); (632½) Birds of N. A., App., p. 520.

**ANTROSTOMUS NUTTALLI.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 327; (78) P. R. R. Surv., vol. ix, p. 147; (87) Mex. Bound. Surv., vol. ii, p. 6; (632½) Birds of N. A., 1874, vol. ii, p. 417, pl. xii (cut, p. 408).

**US VOCIFERUS.**

R. R. Surv., vol. ix, p. 148; (632½) Birds of N. A., 1874, vol. ii, p. 413, pl. xlv, fig. 2 t, p. 416.

**gata.**

R. R. Surv., vol. ix, p. 698.

**brachypterus.**

R. R. Surv., vol. ix, p. 917.

**Kittitidi.**

R. R. Surv., vol. ix, p. 917.

**marmoratus.**

R. R. Surv., vol. ix, p. 915.

**Tomminckii.**

R. R. Surv., vol. ix, p. 916.

**Wrangellii.**

R. R. Surv., vol. ix, p. 917.

Birds of N. A., 1874, vol. iii, p. 312.

**adensis.**

R. R. Surv., vol. ix, p. 41.

**UTRASTUS CANADENSIS.**

Birds of N. A., 1874, vol. iii, p. 314 (cuts, 312, 316, 317).

**ganteus.**

R. R. Surv., vol. ix, p. 687.

**).**

Birds of N. A., 1874, vol. iii, p. 291.

**so FERRUGINEUS.**

Stansbury's Surv. Salt Lake [App. C], p. ; (78) P. R. R. Surv., vol. ix, p. 24; (87) U. S. Bound. Surv., vol. ii, p. 4; (632½)

ds of N. A., 1874, vol. iii, p. 300 (cuts, p. ).

**).****lagopus.**

R. R. Surv., vol. ix, p. 32.

**so LAGOPUS SANCTI-JOHAANNIS.**

Birds of N. A., 1874, vol. iii, p. 304 (cuts, 298, 307, 308, 312).

**o Sancti-Johannis.**

R. R. Surv., vol. ix, p. 33.

**ndias.**

R. R. Surv., vol. ix, p. 668; (87) U. S. & ex. Bound. Surv., vol. ii, p. 24.

**ORDEMANNI.**

R. R. Surv., vol. ix, p. 669; (104) Birds of N. A., 1860, p. 661, pl. lxxxvi.

**major.**

R. R. Surv., vol. ix, p. 833.

**illa.**

R. R. Surv., vol. ix, p. 673.

**maritima.**

R. R. Surv., vol. ix, p. 717.

Birds of N. A., 1874, vol. iii, p. 226.

**capillus.**

R. R. Surv., vol. ix, p. 15.

**LUMBARIUS ATRICAPILLUS.**

Birds of N. A., 1874, vol. iii, p. 237 (cuts, 236, 241).

**).**

Birds of N. A., 1874, vol. iii, p. 244.

**MITIDA.**

R. R. Surv., vol. ix, p. 35; (87) U. S. & ex. Bound. Surv., vol. ii, p. 4; (104) Birds of N. A., 1860, p. 35, pl. lix. Adult and

**egg.****ASTURINA NITIDA FLAGIATA.**

(632½) Birds of N. A., 1874, vol. iii, p. 246 (cuts, pp. 244, 247).

**Athene cucularia.**

(78) P. R. R. Surv., vol. ix, p. 60; (87) Mex.

Bound. Surv., vol. ii, p. 5; (94) P. R. R.

Surv., vol. x, p. 13.

**Athene hypugaea.**

(81) Stansbury's Surv. Salt Lak [App. C], p. 214;

(78) P. R. R. Surv., vol. ix, p. 59; (87)

Mex. Bound. Surv., vol. ii, p. 5.

**Atthis.**

(632½) Birds of N. A., 1874, vol. ii, p. 464.

**Atthis anna.**

(78) P. R. R. Surv., vol. ix, p. 137.

**ATTHIS COERTZ.**

(78) P. R. R. Surv., vol. ix, p. 138; (104) Birds

of N. A., 1860, p. 138, pl. xix. Male and

female.

**ATTHIS HELOSIA.**

(632½) Birds of N. A., 1874, vol. ii, p. 465, pl.

xlvii, fig. 6 (cut, p. 464).

**Atticora.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 270; *Ibid.*, p. 271; *Ibid.*, p. 305.

**Atticora cyanoleuca.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 308.

**Atticora cyanoleuca montana.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 310.

**Atticora fasciata.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 308.

**Atticora fucata.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 308.

**Atticora melanoleuca.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 310.

**Atticora murina.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 311.

**Atticora patagonica.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 311.

**Atticora pileata.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 307.

**Atticora tibialis.**

(115) Review of N. A. Birds, May, 1865, Part

I, p. 307.

**Audubonia occidentalis.**

(78) P. R. R. Surv., vol. ix, p. 670.

**Auriparus.**

(115) Review of N. A. Birds, Aug., 1864, Part

I, p. 85; (632½) Birds of N. A., 1874, vol. i,

p. 111.

**AURIPARUS FLAVICEPS.**

(115) Review of N. A. Birds, Aug., 1864, Part

I, p. 85; (632½) Birds of N. A., 1874, vol. i,

p. 112 (cuts, p. 112).

**Aythya americana.**

(78) P. R. R. Surv., vol. ix, p. 793; (87) Mex.

Bound. Surv., vol. ii, p. 27; (94) P. R. R.

Surv., vol. x, p. 16.

- Aythya vallisneria*.  
(78) P. R. R. Surv., vol. ix, p. 704.
- Basileuterus*.  
(115) Review of N. A. Birds, Apr., 1865, Part I, p. 227; *Ibid.*, p. 238; *Ibid.*, May, 1865, Part I, p. 241.
- Basileuterus Belli*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 250.
- Basileuterus bivittatus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 241.
- Basileuterus chrysogaaster*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 244.
- Basileuterus cinereicollis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 244.
- Basileuterus coronatus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 244.
- Basileuterus culicivorus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 245.
- Basileuterus Delatirii*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 249.
- Basileuterus hypoleucus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 241.
- Basileuterus leucoblepharum*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 244.
- Basileuterus melanogenya*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 248.
- Basileuterus mesochrysus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 250.
- Basileuterus nigriristatus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 251.
- Basileuterus rufifrons*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 248.
- Basileuterus semicervinus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 244.
- Basileuterus stragulatulus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 244.
- Basileuterus superciliosus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 244.
- Basileuterus uropygialis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 246.
- Basileuterus vermivorus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 241.
- Basileuterus viridicatus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 244.
- BATHMIDRUS MAJOR*.  
(78) P. R. R. Surv., vol. ix, p. 166; (104) Birds of N. A., 1860, p. 166, pl. xlvii, fig. 2, female.
- Bernicla (Bernicla) brenta*.  
(78) P. R. R. Surv., vol. ix, p. 767.
- Bernicla canadensis*.  
(78) P. R. R. Surv., vol. ix, p. 764; (37) Mex. Bound. Surv., vol. ii, p. 26.
- Bernicla Hutchinsii*.  
(78) P. R. R. Surv., vol. ix, p. 765.
- Bernicla leucopareia*.  
(78) P. R. R. Surv., vol. ix, p. 765.
- Bernicla leucopsis*.  
(78) P. R. R. Surv., vol. ix, p. 765.
- Bernicla (Bernicla) nigricans*.  
(78) P. R. R. Surv., vol. ix, p. 767.
- Bewickii*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 126.
- Blasipus Heermanni*.  
(78) P. R. R. Surv., vol. ix, p. 848; (90) Pr. Acad. Nat. Sci. Phila., 1859, p. 306.
- Bonasa*.  
(632) Birds of N. A., 1874, vol. iii, p. 448.
- Bonasa Sabini*.  
(78) P. R. R. Surv., vol. ix, p. 631.
- Bonasa umbelloides*.  
(78) P. R. R. Surv., vol. ix, p. 630.
- Bonasa umbellus*.  
(78) P. R. R. Surv., vol. ix, p. 630.
- Bonasa umbellus sabina*.  
(632) Birds of N. A., 1874, vol. iii, p. 444.
- BONASA UMBELLUS UMBELLOIDES*.  
(632) Birds of N. A., 1874, vol. iii, p. 443, pl. iii, fig. 10.
- BONASA UMBELLUS UMBELLUS*.  
(632) Birds of N. A., 1874, vol. iii, p. 448, pl. iii, figs. 2, 9 (cuts, pp. 448, 449).
- Botaurus lentiginosus*.  
(31) Stansbury's Surv. Salt Lake (App. C), p. 320; (78) P. R. R. Surv., vol. ix, p. 674; (87) Mex. Bound. Surv., vol. ii, p. 24.
- Brachyotus Cassinii*.  
(78) P. R. R. Surv., vol. ix, p. 54.
- Brachyrhamphus antiquus*.  
(78) P. R. R. Surv., vol. ix, p. 916.
- Brachyrhamphus brachypterus*.  
(32) Stansbury's Surv. Salt Lake (App. C), p. 335; (78) P. R. R. Surv., vol. ix, p. 917.
- Brachyrhamphus hypoleucus*.  
(99) Pr. Acad. Nat. Sci. Phila., 1859, p. 304.
- Brachyrhamphus Kittlitzii*.  
(78) P. R. R. Surv., vol. ix, p. 917.
- Brachyrhamphus marmoratus*.  
(78) P. R. R. Surv., vol. ix, p. 915.
- Brachyrhamphus Temminckii*.  
(78) P. R. R. Surv., vol. ix, p. 916.
- Brachyrhamphus Wrangellii*.  
(32) Stansbury's Surv. Salt Lake (App. C), p. 335; (78) P. R. R. Surv., vol. ix, p. 917.
- Brunneicollis*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 138.
- Bubo*.  
(632) Birds of N. A., 1874, vol. iii, p. 66.
- Bubo virginianus*.  
(87) Mex. Bound. Surv., vol. ii, p. 4; (90) Pr. Acad. Nat. Sci. Phila., 1859 (1860), p. 302.



*Bubo virginianus arcticus*.

(78) P. R. R. Surv., vol. ix, p. 49; (6324) Birds of N. A., 1874, vol. iii, p. 64.

*Bubo virginianus atlanticus*.

(78) P. R. R. Surv., vol. ix, p. 49.

*Bubo virginianus magellanicus*.

(78) P. R. R. Surv., vol. ix, p. 49.

*Bubo virginianus pacificus*.

(78) P. R. R. Surv., vol. ix, p. 49; (6324) Birds of N. A., 1874, vol. iii, p. 65.

*BUTO VIRGINIANUS VIRGINIANUS*.

(6324) Birds of N. A., 1874, vol. iii, p. 62 (cuts, pp. 62, 63, 64, 98, 99, 100-1).

*Diophala albeola*.

(78) P. R. R. Surv., vol. ix, p. 797; (87) Mex. Bound. Surv., vol. ii, p. 27.

*Diophala americana*.

(78) P. R. R. Surv., vol. ix, p. 796; (94) P. R. R. Surv., vol. x, p. 16.

*Diophala islandica*.

(78) P. R. R. Surv., vol. ix, p. 798.

*Eulysia*.

(6324) Birds of N. A., 1874, vol. i, p. 167.

*BUTOR FLAVA*.

(128) Chicago Acad. Sci., 1899, p. 312, pl. xxx, fig. 1; (6324) Birds of N. A., 1874, vol. i, p. 167, pl. x, fig. 2 (cuts, pp. 167, 168).

*Buteo*.

(6324) Birds of N. A., 1874, vol. iii, p. 254.

*Buteo Bairdii*.

(78) P. R. R. Surv., vol. ix, p. 21.

*Buteo borealis*.

(31) Stansbury's Surv. Salt Lake [App. C], p. 314; (78) P. R. R. Surv., vol. ix, p. 25; (87) Mex. Bound. Surv., vol. ii, p. 3; (6324) Birds of N. A., 1874, vol. iii, p. 281.

*BUTO BOREALIS BOREALIS*.

(6324) Birds of N. A., 1874, vol. iii, p. 282 (cuts, pp. 256, 288).

*Buteo borealis calurus*.

(6324) Birds of N. A., 1874, vol. iii, p. 286.

*Buteo borealis Krideri*.

(6324) Birds of N. A., 1874, vol. iii, p. 284.

*Buteo borealis lucasianus*.

(6324) Birds of N. A., 1874, vol. iii, p. 285.

*BUTO CALURUS*.

(78) P. R. R. Surv., vol. ix, p. 22; (87) Mex. Bound. Surv., vol. ii, p. 3; (94) P. R. R. Surv., vol. x, p. 11, pl. xiv; (104) Birds of N. A., 1860, p. 22, pl. xiv.

*BUTO COOPERI*.

(78) P. R. R. Surv., vol. ix, p. 31; (104) Birds of N. A., 1860, p. 31, pl. xvi; (6324) Birds of N. A., 1874, vol. iii, p. 295 (cuts, pp. 295, 296).

*BUTO ELEGANS*.

(78) P. R. R. Surv., vol. ix, p. 28; (87) Mex. Bound. Surv., vol. ii, p. 3; (104) Birds of N. A., 1860, p. 28, pl. ii, adult; pl. iii, young.

*BUTO FULVIGOSUS*.

(104) Birds of N. A., 1860, p. 30, pl. xv, fig. 1.

*BUTO HARRISI*.

(78) P. R. R. Surv., vol. ix, p. 24; (6324) Birds of N. A., 1874, vol. iii, p. 292 (cut, p. 296).

*Buteo insignatus*.

(98) P. R. R. Surv., vol. ix, p. 23.

*Buteo lineatus*.

(78) P. R. R. Surv., vol. ix, p. 28.

*BUTO LINEATUS ELEGANS*.

(6324) Birds of N. A., 1874, vol. iii, p. 277 (cut, p. 281).

*Buteo lineatus lineatus*.

(6324) Birds of N. A., 1874, vol. iii, p. 275.

*Buteo montanus*.

(78) P. R. R. Surv., vol. ix, p. 26; (87) Mex. Bound. Surv., vol. ii, p. 3; (94) P. R. R. Surv., vol. x, p. 12.

*BUTO OXYPTERUS*.

(78) P. R. R. Surv., vol. ix, p. 30; (94) P. R. R. Surv., vol. x, p. 11, pl. xv; (104) Birds of N. A., 1860, p. 30, pl. xv, fig. 2.

*BUTO PENNSYLVANICUS*.

(78) P. R. R. Surv., vol. ix, p. 29; (6324) Birds of N. A., 1874, vol. iii, p. 259 (cut, p. 261).

*BUTO SWAINSONI*.

(78) P. R. R. Surv., vol. ix, p. 19; (87) Mex. Bound. Surv., vol. ii, p. 3; (94) P. R. R. Surv., vol. x, p. 11, pl. xii, xiii; (104) Birds of N. A., 1860, p. 19, pl. xii, xiii.

*BUTO SWAINSONI OXYPTERUS*.

(6324) Birds of N. A., 1874, vol. iii, p. 266 (cut p. 267).

*BUTO SWAINSONI SWAINSONI*.

(6324) Birds of N. A., 1874, vol. iii, p. 263 (cuts, pp. 256, 264, 269, 270).

*BUTO ZONOCERCUS*.

(6324) Birds of N. A., 1874, vol. iii, p. 272 (cuts, pp. 256, 271-272, 274).

*Butorides brunneescens*.

(78) P. R. R. Surv., vol. ix, p. 676.

*Butorides virescens*.

(78) P. R. R. Surv., vol. ix, p. 676; (87) Mex. Bound. Surv., vol. ii, p. 24.

*Calamospiza*.

(6324) Birds of N. A., 1874, vol. ii, p. 60.

*CALAMOSPIZA BICOLOR*.

(78) P. R. R. Surv., vol. ix, p. 492; (87) Mex. Bound. Surv., vol. ii, p. 16; (90) Fr. Acad. Nat. Sci. Phila., 1859, p. 304; (6324) Birds of N. A., 1874, vol. ii, p. 61, pl. xxix, figg. 2, 3 (cuts, pp. 60, 61).

*Calidris arenaria*.

(78) P. R. R. Surv., vol. ix, p. 723; (99) Fr. Acad. Nat. Sci. Phila., 1859, p. 306.

*Callichelodon*.(115) Review of N. A. Birds, May, 1865, Part I, p. 271; *Ibid.*, p. 293; *Ibid.*, p. 303.*Callipepla*.

(6324) Birds of N. A., 1874, vol. iii, p. 487.

*Callipepla Douglassii*.

(32) Stansbury's Surv. Salt Lake [App. C], p. 334.

*Callipepla elegans*.

(32) Stansbury's Surv. Salt Lake [App. C], p. 334.

*Callipepla Gambeli*.(31a) Stansbury's Surv. Salt Lake [App. C], p. 328; (32) *Ibid.*, p. 334.*Callipepla picta*.

(32) Stansbury's Surv. Salt Lake [App. C], p. 334.

**CALLIPEPLA squamata.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 334; (78) P. R. R. Surv., vol. ix, p. 646; (87) Mex. Bound. Surv., vol. ii, p. 23; (632½) Birds of N. A., 1874, vol. iii, p. 487, pl. lxiii, fig. 6 (cuts p. 488).

**Calypte.**

- (632½) Birds of N. A., 1874, vol. ii, p. 453.

**CALYPTE ANNA.**

- (632½) Birds of N. A., 1874, vol. ii, p. 454, pl. xvii, fig. 7 (cuts, p. 454).

**CALYPTE COSTAE.**

- (632½) Birds of N. A., 1874, vol. ii, p. 457, pl. xvii, fig. 8 (cuts, p. 453).

**Campephilus.**

- (632½) Birds of N. A., 1874, vol. ii, p. 494.

**Campephilus imperialis.**

- (78) P. R. R. Surv., vol. ix, p. 82.

**CAMPEPHILUS PRINCIPALIS.**

- (78) P. R. R. Surv., vol. ix, p. 81; (632½) Birds of N. A., 1874, vol. ii, p. 496, pl. xlix, figg. 1, 2 (cuts, pp. 495, 497).

**Campylorhynchus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 94; *Ibid.*, p. 96; (632½) Birds of N. A., 1874, vol. i, p. 131.

**CAMPYLORHYNCHUS AFFINIS.**

- (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 304; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 100; (632½) Birds of N. A., 1874, vol. i, p. 133, pl. viii, fig. 6.

**Campylorhynchus albibrunneus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 96.

**Campylorhynchus balteatus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 103.

**CAMPYLORHYNCHUS BRUNNEICAPILLUS.**

- (78) P. R. R. Surv., vol. ix, p. 355; (87) U. S. and Mex. Bound. Surv., vol. ii, p. 13; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 99; (632½) Birds of N. A., 1874, vol. i, p. 132, pl. viii, fig. 5 (cuts, pp. 131, 132); *Ibid.*, App., p. 503.

**Campylorhynchus capistratus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 104.

**Campylorhynchus gularis.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 109.

**Campylorhynchus guttatus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 108.

**Campylorhynchus humilis.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 107.

**Campylorhynchus jocosus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 106.

**Campylorhynchus megalopterus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 101.

**Campylorhynchus nigriceps.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 109.

**Campylorhynchus pallescens.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 101.

**Campylorhynchus rufinucha.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 105.

**Campylorhynchus zonatus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 104.

**Canace.**

- (632½) Birds of N. A., 1874, vol. iii, p. 414.

**CANACE CANADENSIS CANADENSIS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 414, pl. lix, figg. 5, 6, pl. lxi, fig. 5 (cut, p. 419).

**CANACE CANADENSIS FRANKLINI.**

- (632½) Birds of N. A., 1874, vol. iii, p. 419, pl. lix, fig. 3 (cut, p. 419).

**Canace obscura fuliginosa.**

- (632½) Birds of N. A., 1874, vol. iii, p. 425.

**CANACE OBSCURUS OBSCURUS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 422, pl. li, figg. 1, 2 (cuts, pp. 421, 422).

**CANACE OBSCURA RICHARDSONI.**

- (632½) Birds of N. A., 1874, vol. iii, p. 427, pl. lix, fig. 4.

**Caprimulgidae.**

- (632½) Birds of N. A., 1874, vol. ii, p. 368.

**Caprimulginae.**

- (632½) Birds of N. A., 1874, vol. ii, p. 368.

**Cardellina.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 236; *Ibid.*, p. 238; *Ibid.*, May, 1865, Part I, p. 263.

**Cardellina rubra.**

- (78) P. R. R. Surv., vol. ix, p. 296; (115) Review of N. A. Birds, May, 1865, Part I, p. 264.

**Cardellina rubrifrons.**

- (115) Review of N. A. Birds, May, 1865, Part I, p. 264.

**Cardellina versicolor.**

- (115) Review of N. A. Birds, May, 1865, Part I, p. 265.

**Cardinalis.**

- (632½) Birds of N. A., 1874, vol. ii, p. 98.

**Cardinalis igneus.**

- (99) Pr. Acad. Nat. Sci., Phila., 1859, p. 305.

**Cardinalis sinuatus.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**CARDINALIS VIRGINIANUS.**

- (78) P. R. R. Surv., vol. ix, p. 509; (87) Mex. Bound. Surv., vol. ii, p. 17; (632½) Birds of N. A., 1874, vol. ii, p. 100, pl. xxx, figg. 6, 7 (cuts, pp. 98, 100).

**CARDINALIS VIRGINIANUS IGNEUS.**

- (632½) Birds of N. A., 1874, vol. ii, p. 103, pl. xxx, fig. 10; *Ibid.*, App., p. 516.

**Carpodacus.**

- (632½) Birds of N. A., 1874, vol. i, p. 458.

**CARPODacus CALIFORNICUS.**

- (78) P. R. R. Surv., vol. ix, p. 412; (1864) Birds of N. A., 1860, p. 412, pl. lxxii, figg. 1, 1. Male and female.

**CARPODACUS CASSEINI.**

- (98) *Pr. Acad. Nat. Sci. Phila.*, 1854, p. 119;  
(78) *P. R. R. Surv.*, vol. ix, p. 414; (104) *Birds of N. A.*, 1860, p. 414, pl. xxvii, fig. 1. Male; (632½) *Birds of N. A.*, 1874, vol. i, p. 466, pl. xxi, figg. 4, 5.

**Carpodacus familiaris.**

- (32) *Stansbury's Surv. Salt Lake [App. C]*, p. 331.

**Carpodacus frontalis.**

- (78) *P. R. R. Surv.*, vol. ix, p. 415; (87) *Mex. Bound. Surv.*, vol. ii, p. 14; (90) *Pr. Acad. Nat. Sci. Phila.*, 1859, p. 304; (632½) *Birds of N. A.*, 1874, vol. i, p. 465.

**CARPODACUS FRONTALIS FRONTALIS.**

- (632½) *Birds of N. A.*, 1874, vol. i, p. 466, pl. xxi, figg. 3, 6 (cuts, pp. 459, 461).

**CARPODACUS FRONTALIS RHODOCOLPUS.**

- (632½) *Birds of N. A.*, 1874, vol. i, p. 468, pl. xxi, fig. 9.

**Carpodacus haemorrhous.**

- (78) *P. R. R. Surv.*, vol. ix, p. 417.

**Carpodacus obscurus.**

- (32) *Stansbury's Surv. Salt Lake [App. C]*, p. 331.

**CARPODACUS PURPUREUS.**

- (78) *P. R. R. Surv.*, vol. ix, p. 412; (632½) *Birds of N. A.*, 1874, vol. i, p. 462, pl. xxi, figg. 7, 8.

**CARPODACUS PURPUREUS CALIFORNICUS.**

- (632½) *Birds of N. A.*, 1874, vol. i, p. 465, pl. xxi, figg. 10, 11.

**Carpodacus purpureus.**

- (6) *Lit. Rec. and Journ. Linnæan, Ass. Penn. Col.*, Oct., 1845, p. 254.

**Catarractes arva.**

- (78) *P. R. R. Surv.*, vol. ix, p. 915.

**Catarractes lomvia.**

- (78) *P. R. R. Surv.*, vol. ix, p. 913.

**Catarractes ringvia.**

- (78) *P. R. R. Surv.*, vol. ix, p. 914.

**Catharista.**

- (632½) *Birds of N. A.*, 1874, vol. iii, p. 350.

**CATHARISTA ATRATA.**

- (632½) *Birds of N. A.*, 1874, vol. iii, p. 351 (cuts, pp. 350, 352, 353, 356).

**Cathartes atratus.**

- (78) *P. R. R. Surv.*, vol. ix, p. 5.

**Cathartes aura.**

- (78) *P. R. R. Surv.*, vol. ix, p. 4; (87) *Mex. Bound. Surv.*, vol. ii, p. 3.

**Cathartes Burrovianus.**

- (78) *P. R. R. Surv.*, vol. ix, p. 6.

**Cathartes californianus.**

- (78) *P. R. R. Surv.*, vol. ix, p. 5.

**Cathartides.**

- (632½) *Birds of N. A.*, 1874, vol. viii, p. 335.

**Catharus.**

- (115) *Review of N. A. Birds*, June, 1864, Part I, p. 4; *Ibid.*, p. 6; *Ibid.*, p. 7.

**Catharus dryas.**

- (115) *Review of N. A. Birds*, June, 1864, Part I, p. 10.

**Catharus frontalis.**

- (115) *Review of N. A. Birds*, June, 1864, Part I, p. 9.

**Catharus melpomene.**

- (115) *Review of N. A. Birds*, June, 1864, Part I, p. 7.

**Catharus mexicanus.**

- (115) *Review of N. A. Birds*, June, 1864, Part I, p. 11.

**Catharus occidentalis.**

- (115) *Review of N. A. Birds*, June, 1864, Part I, p. 8.

**Catherpes.**

- (115) *Review of N. A. Birds*, Aug., 1864, Part I, p. 94; *Ibid.*, p. 110; (632½) *Birds of N. A.*, 1874, vol. i, p. 137.

**Catherpes mexicanus.**

- (78) *P. R. R. Surv.*, vol. ix, p. 356; (87) *Mex. Bound. Surv.*, vol. ii, p. 13; (115) *Review of N. A. Birds*, Aug., 1864, Part I, p. 111.

**CATHERPES MEXICANUS CONSPICUUS.**

- (632½) *Birds of N. A.*, 1874, vol. i, p. 139, pl. viii, fig. 4 (cuts, p. 138); *Ibid.*, App., p. 508.

**Centrocercus.**

- (632½) *Birds of N. A.*, 1874, vol. iii, p. 428.

**CENTROCERCUS UROPHARIANUS.**

- (78) *P. R. R. Surv.*, vol. ix, p. 624; (94) *P. R. R. Surv.*, vol. x, p. 14; (632½) *Birds of N. A.*, 1874, vol. iii, p. 429, pl. ix, figg. 2, 4, pl. lxi, fig. 6 (cuts, pp. 430, 431).

**Centronyx.**

- (632½) *Birds of N. A.*, 1874, vol. i, p. 530.

**CENTRONYX BAIRDII.**

- (78) *P. R. R. Surv.*, vol. ix, p. 441; (632½) *Birds of N. A.*, 1874, vol. i, p. 531, pl. xxv, fig. 3 (cuts, p. 531); *Ibid.*, App., p. 510.

**Centrophanes lapponicus.**

- (78) *P. R. R. Surv.*, vol. ix, p. 433.

**Centrophanes melanomus.**

- (78) *P. R. R. Surv.*, vol. ix, p. 436.

**Centrophanes ornatus.**

- (78) *P. R. R. Surv.*, vol. ix, p. 435.

**Centrophanes pictus.**

- (78) *P. R. R. Surv.*, vol. ix, p. 434.

**Centurus.**

- (632½) *Birds of N. A.*, 1874, vol. ii, p. 553.

**CENTURUS AURIFRONS.**

- (632½) *Birds of N. A.*, 1874, vol. ii, p. 557, pl. iii, figg. 3, 6.

**CENTURUS CAROLINUS.**

- (78) *P. R. R. Surv.*, vol. ix, p. 109; (632½) *Birds of N. A.*, 1874, vol. ii, p. 554, pl. iii, figg. 1, 4 (cuts, p. 555).

**Centurus elegans.**

- (32) *Stansbury's Surv. Salt Lake [App. C]*, p. 333.

**CENTURUS FLAVIVENTRIS.**

- (32) *Stansbury's Surv. Salt Lake [App. C]*, p. 333; (78) *P. R. R. Surv.*, vol. ix, p. 110; (87) *Mex. Bound. Surv.*, vol. ii, p. 5, pl. iv; (104) *Birds of N. A.*, 1860, p. 110, pl. xliii.

**Centurus Santacruzi.**

- (32) *Stansbury's Surv. Salt Lake [App. C]*, p. 333.

**CENTURUS UROPHYGALIS.**

- (58) *Pr. Acad. Nat. Sci. Phila.*, 1854, p. 121; (78) *P. R. R. Surv.*, vol. ix, p. 111; (87) *Mex. Bound. Surv.*, vol. ii, p. 6; (90) *Pr. Acad. Nat. Sci. Phila.*, 1859 (1860), p. 302; (104) *Birds of N. A.*, 1860, p. 111, pl. xxxvi; (632½) *Birds of N. A.*, 1874, vol. ii, p. 558, pl. iii, figg. 2, 5; *Ibid.*, App., p. 521.

- Cerorhina monocerata.*  
(78) P. R. R. Surv., vol. ix, p. 905.
- Cerorhina Suckleyi.*  
(78) P. R. R. Surv., vol. ix, p. 906.
- Certhia.*  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 89; (632½) Birds of N. A., 1874, vol. i, p. 124.
- Certhia americana.*  
(78) P. R. R. Surv., vol. ix, p. 372; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 89.
- CERTHIA FAMILIARIS AMERICANA.*  
(632½) Birds of N. A., 1874, vol. i, p. 125, pl. viii, fig. 11 (cuts, p. 124).
- Certhia familiaris mexicana.*  
(632½) Birds of N. A., 1874, vol. i, p. 128.
- CERTHIA MEXICANA.*  
(78) P. R. R. Surv., vol. ix, p. 373; (104) Birds of N. A., 1860, p. 373, pl. lxxxiii, fig. 2; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 90.
- Certhiidae.*  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 89; (632½) Birds of N. A., 1874, vol. i, p. 124.
- Certhiola.*  
(632½) Birds of N. A., 1874, vol. i, p. 425.
- CERTHIOLA BARBAMENSIS.*  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 163, fig. 2; (632½) Birds of N. A., 1874, vol. i, p. 428, pl. xix, fig. 5.
- Certhiola barbadensis.*  
(632½) Birds of N. A., 1874, App., p. 508.
- Certhiola caboti.*  
(632½) Birds of N. A., 1874, App., p. 508.
- CERTHIOLA FLAVOLEA.*  
(78) P. R. R. Surv., vol. ix, p. 924; (104) Birds of N. A., 1860, p. 924, pl. lxxxiii, fig. 3.
- Certhiola frontalis.*  
(632½) Birds of N. A., 1874, App., p. 508.
- Certhiola newtoni.*  
(632½) Birds of N. A., 1874, App., p. 508.
- Ceryle.*  
(632½) Birds of N. A., 1874, vol. ii, p. 391.
- CERYLE ALCYON.*  
(78) P. R. R. Surv., vol. ix, p. 158; (87) Mex. Bound. Surv., vol. ii, p. 7; (632½) Birds of N. A., 1874, vol. ii, p. 392, pl. xiv, fig. 6 (cuts, pp. 392, 393, 397).
- CERYLE AMERICANA.*  
(32) Stansbury's Surv. Salt Lake [App. C], p. 327; (78) P. R. R. Surv., vol. ix, p. 159; (87) Mex. Bound. Surv., vol. ii, p. 7, pl. vii; (104) Birds of N. A., 1860, p. 159, pl. xiv.
- CERYLE AMERICANA CABBANISI.*  
(632½) Birds of N. A., 1874, vol. ii, p. 396, pl. xiv, fig. 9.
- Chetura.*  
(632½) Birds of N. A., 1874, vol. ii, p. 431.
- CHETURA LEUCICA.*  
(632½) Birds of N. A., 1874, vol. ii, p. 432, pl. xiv, fig. 7 (cuts, pp. 421, 431, 432).
- Chetura pelagica.*  
(78) P. R. R. Surv., vol. ix, p. 144.
- CHETURA VAUGHII.*  
(78) P. R. R. Surv., vol. ix, p. 145; (104) Birds of N. A., 1860, p. 145, pl. xviii, fig. 2; (532½) Birds of N. A., 1874, vol. ii, p. 435, pl. xiv, fig. 8. *Ibid.*, App., p. 521.
- Chaeturinae.*  
(632½) Birds of N. A., 1874, vol. ii, p. 431.
- Chamaea.*  
(115) Review of N. A. Birds, July, 1874, Part I, p. 76; (632½) Birds of N. A., 1874, vol. i, p. 83.
- CHAMAEA FASCIATA.*  
(78) P. R. R. Surv., vol. ix, p. 379; (115) Review of N. A. Birds, July, 1874, Part I, p. 76; (632½) Birds of N. A., 1874, vol. i, p. 84, pl. vi, fig. 8 (cuts, p. 83); *Ibid.*, App., p. 562; (32) Stansbury's Surv. Salt Lake [App. C], p. 331.
- Chamaeade.*  
(115) Review of N. A. Birds, July, 1874, Part I, p. 76; (632½) Birds of N. A., 1874, vol. i, p. 83.
- Chamaepelia.*  
(632½) Birds of N. A., 1874, vol. iii, p. 338.
- CHAMAEPELIA PASSERINA.*  
(78) P. R. R. Surv., vol. ix, p. 606; (87) Mex. Bound. Surv., vol. ii, p. 22; (89) Pr. Acad. Nat. Sci. Phila., 1859, p. 305; (632½) Birds of N. A., 1874, vol. iii, p. 338, pl. lviii, fig. 6 (cuts, pp. 338, 390); *Ibid.*, App., p. 322.
- Charadrius virginicus.*  
(78) P. R. R. Surv., vol. ix, p. 609; (87) Mex. Bound. Surv., vol. ii, p. 25.
- Charadrius vociferus.*  
(31) Stansbury's Surv. Salt Lake [App. C], p. 319.
- Chanielasmus streperus.*  
(78) P. R. R. Surv., vol. ix, p. 663; (87) Mex. Bound. Surv., vol. ii, p. 27.
- Chelidon.*  
(115) Review of N. A. Birds, May, 1866, Part I, p. 271.
- Chen caerulescens.*  
(78) P. R. R. Surv., vol. ix, p. 761.
- Chen hyperboreus.*  
(78) P. R. R. Surv., vol. ix, p. 760.
- Chenelopex impennis.*  
(78) P. R. R. Surv., vol. ix, p. 900.
- Chloephaya canagica.*  
(78) P. R. R. Surv., vol. ix, p. 768.
- Chloroceryle americana.*  
(78) P. R. R. Surv., vol. ix, p. 159.
- CHLOROPHANES ATRICAPILLA.*  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 163, fig. 3.
- Chondestes.*  
(632½) Birds of N. A., 1874, vol. i, p. 562.
- CHONDESTES GRAMMACA.*  
(78) P. R. R. Surv., vol. ix, p. 456; (87) Mex. Bound. Surv., vol. ii, p. 15; (89) Pr. Acad. Nat. Sci. Phila., 1859, p. 304; (632½) Birds of N. A., 1874, vol. i, p. 562 (cuts, pp. 562, 563), vol. ii, pl. xxxi, fig. 1.
- Chordeiles.*  
(632½) Birds of N. A., 1874, vol. ii, p. 466.
- CHORDEILES ACUTIPENNIS TEXENSIS.*  
(632½) Birds of N. A., 1874, vol. ii, p. 466, pl. xlvi, fig. 5.
- Chordeiles brasilianna.*  
(32) Stansbury's Surv. Salt Lake [App. C], p. 327.

**CHORDILES HENRYI.**

- (78) P. R. R. Surv., vol. ix, p. 153, fig. 2; (87) Mex. Bound. Surv., vol. ii, p. 7; (94) P. R. R. Surv., vol. x, p. 13, pl. xvii; (104) Birds of N. A., 1860, p. 153, pl. xvii.

**Chordeiles popetue.**

- (78) P. R. R. Surv., vol. ix, p. 151.

**CHORDILES POPETUE HENRYI.**

- (632½) Birds of N. A., 1874, vol. ii, p. 404, pl. xvi, fig. 4.

**Chordeiles popetue minor.**

- (632½) Birds of N. A., 1874, App., p. 520.

**CHORDILES POPETUE POPETUE.**

- (632½) Birds of N. A., 1874, vol. ii, p. 401 (cuts, pp. 399, 401).

**CHORDILES TERNUM.**

- (78) P. R. R. Surv., vol. ix, p. 154; (87) U. S. and Mex. Bound. Surv., vol. ii, p. 7, pl. vi; (99) Fr. Acad. Nat. Sci. Phila., 1859 (1860), p. 303; (104) Birds of N. A., 1860, p. 154, pl. xlv; (632½) Birds of N. A., 1874, App., p. 520.

**Chroicocephalus atricilla.**

- (78) P. R. R. Surv., vol. ix, p. 850; (87) Mex. Bound. Surv., vol. ii, p. 27.

**CHROICOCEPHALUS CUCULLATUS.**

- (78) P. R. R. Surv., vol. ix, p. 851; (104) Birds of N. A., 1860, p. 851, pl. xciii, fig. 1.

**CHROICOCEPHALUS FRANKLINI.**

- (78) P. R. R. Surv., vol. ix, p. 851; (104) Birds of N. A., 1860, p. 851, pl. xciii, fig. 3.

**Chroicocephalus minutus.**

- (78) P. R. R. Surv., vol. ix, p. 853.

**Chroicocephalus philadelphia.**

- (78) P. R. R. Surv., vol. ix, p. 852.

**Chrysomitris.**

- (632½) Birds of N. A., 1874, vol. i, p. 470.

**CHRYSOMITRIS LAWRENCII.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 330; (78) P. R. R. Surv., vol. ix, p. 424; (632½) Birds of N. A., 1874, vol. i, p. 478, pl. xii, fig. 14, 15.

**Chrysomitris magellanicus.**

- (78) P. R. R. Surv., vol. ix, p. 419.

**CHRYSOMITRIS MEXICANA.**

- (78) P. R. R. Surv., vol. ix, p. 423; (87) Mex. Bound. Surv., vol. ii, p. 14, pl. xvi, fig. 1; (104) Birds of N. A., 1860, p. 424, pl. liv, fig. 1.

**CHRYSOMITRIS PINUS.**

- (78) P. R. R. Surv., vol. ix, p. 425; (632½) Birds of N. A., 1874, vol. i, p. 480, pl. xxii, fig. 16, (cut, p. 480).

**Chrysomitris psaltria.**

- (78) P. R. R. Surv., vol. ix, p. 422; (632½) Birds of N. A., 1874, App., p. 509.

**CHRYSOMITRIS PSALTRIA ARIZONÆ.**

- (632½) Birds of N. A., 1874, vol. i, p. 476, pl. xxii, fig. 11; *Ibid.*, App., p. 509.

**CHRYSOMITRIS PSALTRIA MEXICANA.**

- (632½) Birds of N. A., 1874, vol. i, p. 478, pl. xxii, fig. 12, 13.

**CHRYSOMITRIS PSALTRIA PSALTRIA.**

- (632½) Birds of N. A., 1874, vol. i, p. 474, pl. xxii, fig. 9, 10.

**Chrysomitris Stanleyi.**

- (78) P. R. R. Surv., vol. ix, p. 420.

**Chrysomitris tristis.**

- (78) P. R. R. Surv., vol. ix, p. 421; (632½) Birds of N. A., 1874, vol. i, p. 471, pl. xxii, fig. 7, 8 (cuts pp. 470, 472).

**Chrysomitris Yarelli.**

- (78) P. R. R. Surv., vol. ix, p. 421.

**Chrysopoga typica.**

- (52) Stansbury's Surv. Salt Lake [App. C], p. 330.

**Ciceronia microceros.**

- (78) P. R. R. Surv., vol. ix, p. 908.

**Ciceronia pusillus.**

- (78) P. R. R. Surv., vol. ix, p. 909.

**Cichlerminia Bonapartii.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59.

**Cichlopaia.**

- (115) Review of N. A. Birds, June, 1866, Part I, p. 417; (115) Review of N. A. Birds, June, 1866, Part I, p. 433.

**Cichlopaia leucogonyx.**

- (115) Review of N. A. Birds, June, 1866, Part I, p. 434.

**Cinclids.**

- Review of N. A. Birds, June, 1864, Part I, p. 3; *Ibid.*, p. 59; *Ibid.*, July, 1864, Part I, p. 59; (632½) Birds of N. A., 1874, vol. i, p. 55.

**Cinlocerthia gutturalis.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59.

**Cinlocerthia ruficauda.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59.

**Cinclus.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59; (632½) Birds of N. A., 1874, vol. i, p. 55.

**Cinclus mexicanus.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 60; (632½) Birds of N. A., 1874, vol. i, p. 56, pl. v, fig. 1 (cuts, p. 55).

**Cinnicerthia.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 94; *Ibid.*, p. 111.

**Cinnicerthia unibrunnea.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 111.

**Cinnicerthia unirufa.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 111.

**Circus.**

- (632½) Birds of N. A., 1874, vol. iii, p. 212.

**CIRCUS CYANEUS HUDSONIUS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 214 (cuts pp. 212, 217).

**Circus hudsonius.**

- (78) P. R. R. Surv., vol. ix, p. 38; (87) Mex. Bound. Surv., vol. ii, p. 4; (94) P. R. R. Surv., vol. p. 12.

**Cistothorus.**

- (115) Review N. A. Birds, Aug., 1864, Part I, p. 94; *Ibid.*, p. 146; (632½) Birds of N. A., 1874, vol. i, p. 158.

- Cistothorus elegans*.  
(115) Review of N. A. Birds, Aug., 1884, Part I, p. 146.
- CISTOTHORUS PALUSTRIS*.  
(78) P. R. R. Surv., vol. ix, p. 364; (115) Review of N. A. Birds, Aug., 1884, Part I, p. 147; (632½) Birds of N. A., 1874, vol. i, p. 161, pl. ix, fig. 6 (cuts pp. 158, 160).
- Cistothorus palustris paludicola*.  
(115) Review of N. A. Birds, Aug., 1884, Part I, p. 148.
- Cistothorus (Cistothorus) stellaris*.  
(78) P. R. R. Surv., vol. ix, p. 365.
- CISTOTHORUS STELLARIS*.  
(115) Review of N. A. Birds, Aug., 1884, Part I, p. 146; (632½) Birds of N. A., 1874, vol. i, p. 159, pl. ix, fig. 7; 1844, App., 8, p. 504 (cut).
- Clangula albeola*.  
(31) Stansbury's Surv. Salt Lake [App. C], p. 324.
- Coccothraustes*.  
(632½) Birds of N. A., 1874, vol. i, p. 446.
- Coccothraustes ferreo-rostris*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 351.
- Coccygus*.  
(632½) Birds of N. A., 1874, vol. ii, p. 470.
- Coccygus*.  
(632½) Birds of N. A., 1874, vol. ii, p. 475.
- COCCYGUS AMERICANUS*.  
(78) P. R. R. Surv., vol. ix, p. 76; (632½) Birds of N. A., 1874, vol. ii, p. 477, pl. xlviii, fig. 3 (cuts, pp. 476, 477).
- COCCYGUS ERYTHROPTHALMUS*.  
(78) P. R. R. Surv., vol. ix, p. 77; (632½) Birds of N. A., 1874, vol. ii, p. 484, pl. xlviii, fig. 5.
- COCCYGUS MINOR*.  
(78) P. R. R. Surv., vol. ix, p. 78; (632½) Birds of N. A., 1874, vol. ii, p. 482, pl. xlviii, fig. 4.
- Cerebidae*.  
(632½) Birds of N. A., 1874, vol. i, p. 425.
- Colaptes*.  
(632½) Birds of N. A., 1874, vol. ii, p. 573.
- COLAPTES AURATUS*.  
(78) P. R. R. Surv., vol. ix, p. 118; (632½) Birds of N. A., 1874, vol. ii, p. 575, pl. lv, figs. 1, 2 (cut, p. 574).
- Colaptes Ayresii*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 333.
- COLAPTES CHRYSOIDES*.  
(78) P. R. R. Surv., vol. ix, p. 125; (87) Mex. Bound. Surv., vol. ii, p. 6; (99) Pr. Acad. Nat. Sci. Phila., 1859 (1860), p. 302; (632½) Birds of N. A., 1874, vol. ii, p. 583, pl. liv, figs. 1, 2.
- Colaptes collaris*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 333.
- COLAPTES HYBRIDUS*.  
(78) P. R. R. Surv., vol. ix, p. 122; (632½) Birds of N. A. 1873, vol. ii, p. 582, pl. liv, fig. 3.
- Colaptes mexicanoides*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 333.
- COLAPTES MEXICANUS*.  
(78) P. R. R. Surv., vol. ix, p. 120; (92) Mex. Bound. Surv., vol. ii, p. 6; (632½) Birds of N. A., 1874, vol. ii, p. 572, pl. lv, figs. 2, 4 (cut, p. 579).
- Collurio*.  
(632½) Birds of N. A., 1874, vol. i, p. 432; (115) Review of N. A. Birds, June, 1884, Part I, p. 437.
- COLLURIO BOREALIS*.  
(115) Review of N. A. Birds, June, 1884, Part I, p. 437; (632½) Birds of N. A., 1874, vol. i, p. 415, pl. xix, figs. 1, 2.
- Collurio elegans*.  
(115) Review of N. A. Birds, June, 1884, Part I, p. 444.
- Collurio excubitoroides*.  
(115) Review of N. A. Birds, June, 1884, Part I, p. 445.
- COLLURIO LUDOVICIANUS*.  
(115) Review of N. A. Birds, June, 1884, Part I, p. 443; (632½) Birds of N. A., 1874, vol. i, p. 418, pl. xix, fig. 4.
- COLLURIO LUDOVICIANUS EXCUBITOROIDES*.  
(632½) Birds of N. A., 1874, vol. i, p. 431, pl. xix, fig. 3 (cuts, pp. 412, 415, 421).
- Collurio ludovicianus robustus*.  
(632½) Birds of N. A., 1874, vol. i, p. 430; 1864, App., p. 508.
- Collyrio borealis*.  
(78) P. R. R. Surv., vol. ix, p. 334.
- COLLYRIO ELEGANS*.  
(78) P. R. R. Surv., vol. ix, p. 336; (104) Birds of N. A., 1860, p. 328, pl. lxxv, fig. 1.
- COLLYRIO EXCUBITOROIDES*.  
(78) P. R. R. Surv., vol. ix, p. 337; (87) Mex. Bound. Surv., vol. ii, p. 11; (104) Birds of N. A., 1860, p. 327, pl. lxxv, fig. 2.
- Collyrio ludovicianus*.  
(78) P. R. R. Surv., vol. ix, p. 325.
- Columba*.  
(632½) Birds of N. A., 1874, vol. iii, p. 358.
- Columba (Columba) fasciata*.  
(78) P. R. R. Surv., vol. ix, p. 507.
- COLUMBA FASCIATA*.  
(87) Mex. Bound. Surv., vol. ii, p. 21; (632½) Birds of N. A., 1874, vol. iii, p. 360, pl. lvi, fig. 2 (cuts, pp. 358, 361).
- Columba (Columba) flavirostris*.  
(78) P. R. R. Surv., vol. ix, p. 508.
- COLUMBA FLAVIROSTRIS*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 334; (87) Mex. Bound. Surv., vol. ii, p. 21, pl. xxii; (104) Birds of N. A., 1860, p. 508, pl. lxi; (632½) Birds of N. A., 1874, vol. iii, p. 366, pl. lvii, fig. 5.
- COLUMBA LEUCOCEPHALA*.  
(78) P. R. R. Surv., vol. ix, p. 500; (632½) Birds of N. A., 1874, vol. iii, p. 368, pl. lvii, fig. 1 (cut, p. 364).
- Columba leucoptera*.  
(31-a) Stansbury's Surv. Salt Lake [App. C], p. 326.
- Columba solitaria*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 323.

## Columbidae.

(632½) Birds of N. A., 1874, vol. iii, p. 357.

## Columbinae.

(632½) Birds of N. A., 1874, vol. iii, p. 357.

## Colymbus arcticus.

(78) P. R. R. Surv., vol. ix, p. 888.

## Colymbus glacialis.

(31) Stansbury's Surv. Salt Lake [App. C], p. 324.

## Colymbus pacificus.

(78) P. R. R. Surv., vol. ix, p. 889.

## Colymbus septentrionalis.

(78) P. R. R. Surv., vol. ix, p. 890.

## Colymbus torquatus.

(78) P. R. R. Surv., vol. ix, p. 888.

## Coccyzus labradorius.

(78) P. R. R. Surv., vol. ix, p. 808.

## Coccyzus ornatus.

(32) Stansbury's Surv. Salt Lake [App. C], p. 327.

## Contopus.

(632½) Birds of N. A., 1874, vol. ii, p. 350.

## COTOPUS BOREALIS.

(78) P. R. R. Surv., vol. ix, p. 188; (632½) Birds of N. A., 1874, vol. ii, p. 353, pl. xlv, fig. 1 (cuts, pp. 350, 353).

## COTOPUS FRETINAX.

(632½) Birds of N. A., 1874, vol. 2, p. 356, pl. xlv, fig. 2.

## Contopus richardsonii.

(78) P. R. R. Surv., vol. ix, p. 189; (87) Mex. Bound. Surv., vol. ii, p. 9.

## COTOPUS VIRENS.

(78) P. R. R. Surv., vol. ix, p. 190; (632½) Birds of N. A., 1874, vol. ii, p. 357, pl. xlv, fig. 3.

## COTOPUS VIRENS RICHARDSONI.

(632½) Birds of N. A., 1874, vol. ii, p. 360, pl. xlv, fig. 4.

## Corynor.

(632½) Birds of N. A., 1874, vol. ii, p. 586.

## COTURNICULUS CAROLINENSIS.

(78) P. R. R. Surv., vol. ix, p. 67; (632½) Birds of N. A., 1874, vol. ii, p. 587, pl. lvi, figg. 1, 2 (cuts, pp. 586, 587).

## Corynor.

(632½) Birds of N. A., 1874, vol. ii, p. 231.

## Corynor.

(632½) Birds of N. A., 1874, vol. ii, p. 231.

## Corynor.

(632½) Birds of N. A., 1874, vol. ii, p. 232.

## COTURNICULUS AMERICANUS.

(104) Birds of N. A., 1860, p. 566, pl. xxiii; (632½) Birds of N. A., 1874, vol. ii, p. 243, pl. xxxvii, fig. 5.

## COTURNICULUS AMERICANUS FLORIDANUS.

(78) P. R. R. Surv., vol. ix, p. 568; (632½) Birds of N. A., 1874, vol. ii, p. 247, pl. xxxvii, fig. 9.

## COTURNICULUS CACALOTL.

(78) P. R. R. Surv., vol. ix, p. 563; (104) Birds of N. A., 1860, p. 563, pl. xx.

## COTURNICULUS CARNIVORUS.

(78) P. R. R. Surv., vol. ix, p. 560; (87) Mex. Bound. Surv., vol. ii, p. 20; (94) P. R. R. Surv., vol. x, p. 14; (104) Birds of N. A., 1860, p. 560, pl. xxi.

## CORVUS CAURINUS.

(78) P. R. R. Surv., vol. ix, p. 560; (104) Birds of N. A., 1860, p. 560, pl. xxiv; (632½) Birds of N. A., 1874, vol. ii, p. 248, pl. xxxvii, fig. 3.

## CORVUS CORAX CARNIVORUS.

(632½) Birds of N. A., 1874, vol. ii, p. 234, pl. xxxvii, fig. 6 (cuts, pp. 232, 234).

## CORVUS CRYPTOLEUCUS.

(78) P. R. R. Surv., vol. ix, p. 565; (87) Mex. Bound. Surv., vol. ii, p. 20; (104) Birds of N. A., 1860, p. 565, pl. xxii; (632½) Birds of N. A., 1874, vol. ii, p. 242, pl. xxxvii, fig. 8; *Ibid.*, App., p. 518.

## CORVUS FLORIDANUS.

(104) Birds of N. A., 1860, p. 568, pl. lxvii, fig. 1.

## CORVUS OESIFRAGUS.

(78) P. R. R. Surv., vol. ix, p. 571; (104) Birds of N. A., 1860, p. 571, pl. lxvii, fig. 2; (632½) Birds of N. A., 1874, vol. ii, p. 251, pl. xxxvii, fig. 7.

## Coturnicops noveboracensis.

(78) P. R. R. Surv., vol. ix, p. 750.

## Coturniculus.

(632½) Birds of N. A., 1874, vol. i, p. 548.

## COTURNICULUS HENSLOWI.

(78) P. R. R. Surv., vol. ix, p. 451; (632½) Birds of N. A., 1874, vol. i, p. 550, pl. xxv, fig. 5.

## COTURNICULUS LECONTI.

(632½) Birds of N. A., 1874, vol. i, p. 552, pl. xxv, fig. 6; *Ibid.* App., p. 513.

## Coturniculus Lecontii.

(78) P. R. R. Surv., vol. ix, p. 452.

## COTURNICULUS PASSERINUS.

(78) P. R. R. Surv., vol. ix, p. 450; (87) Mex. Bound. Surv., vol. ii, p. 15; (632½) Birds of N. A., 1874, vol. i, p. 553, pl. xxv, fig. 4 (cuts, pp. 548, 550).

## Coturniculus passerinus perpallidus.

(632½) Birds of N. A., 1874, vol. i, p. 556; *Ibid.*, App., p. 513.

## Cotyle.

(115) Review of N. A. Birds, May, 1865, Part I, p. 271; *Ibid.*, p. 318; *Ibid.*, p. 319; (632½) Birds of N. A., 1874, vol. i, p. 353.

## COTYLE HIPPIA.

(78) P. R. R. Surv., vol. ix, p. 313; (115) Review of N. A. Birds, May, 1865, Part I, p. 319; (632½) Birds of N. A., 1874, vol. i, p. 353, pl. xvi, fig. 14 (cuts, pp. 353, 354).

## Cotyle scirpennia.

(78) P. R. R. Surv., vol. ix, p. 313; (87) Mex. Bound. Surv., vol. ii, p. 11.

## Cracidae.

(632½) Birds of N. A., 1874, vol. iii, p. 397.

## Craxirex unicolor.

(78) P. R. R. Surv., vol. ix, p. 46; (87) Mex. Bound. Surv., vol. ii, p. 4.

## Creagrus furcatus.

(78) P. R. R. Surv., vol. ix, p. 857.

## Creciscus jamaicensis.

(78) P. R. R. Surv., vol. ix, p. 749.

## CREX PRATENSIS.

(78) P. R. R. Surv., vol. ix, p. 751; (104) Birds of N. A., 1860, p. 751, pl. lxxxix, fig. 2.

## Crotophaga.

(632½) Birds of N. A., 1874, vol. ii, p. 496.

**CROTAPHAGA ANI.**

- (78) P. R. R. Surv., vol. ix, p. 72; (104) Birds of N. A., 1860, p. 72, pl. lxxxiv, fig. 2; (632½) Birds of N. A., 1874, vol. ii, p. 488, pl. xlviii, fig. 2 (cuts, pp. 487, 487).

**CROTAPHAGA RUGIROSTRIS.**

- (78) P. R. R. Surv., vol. ix, p. 71; (104) Birds of N. A., 1860, p. 71, pl. lxxxiv, fig. 1.

**Cuculidae.**

- (632½) Birds of N. A., 1874, vol. ii, p. 470.

**Culicivora atricapilla.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

**Culicivora plumbea.**

- (56) Proc. Acad. Nat. Sci. Phila., 1854, p. 118.

**Cupidonia.**

- (632½) Birds of N. A., 1874, vol. iii, p. 439.

**Cupidonia cupido.**

- (78) P. R. R. Surv., vol. ix, p. 628.

**CUPIDONIA CUPIDO CUPIDO.**

- (632½) Birds of N. A., 1874, vol. iii, p. 440, pl. lxi, fig. 1, 7 (cuts, p. 441).

**Cupidonia cupido pallidicinctus.**

- (632½) Birds of N. A., 1874, vol. iii, p. 446.

**Curvirostra americana.**

- (78) P. R. R. Surv., vol. ix, p. 426.

**Curvirostra leucoptera.**

- (78) P. R. R. Surv., vol. ix, p. 427.

**Cyanocitta.**

- (632½) Birds of N. A., 1874, vol. ii, p. 282.

**CYANOCITTA CALIFORNICA.**

- (78) P. R. R. Surv., vol. ix, p. 584; (87) Mex. Bound. Surv., vol. ii, p. 20; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 305; (632½) Birds of N. A., 1874, vol. ii, p. 288, pl. xi, fig. 1 (cuts, pp. 283, 288); *Ibid.*, App., p. 518.

**CYANOCITTA CALIFORNICA WOODHOUSEI.**

- (632½) Birds of N. A., 1874, vol. ii, p. 291, pl. xi, fig. 3.

**CYANOCITTA FLORIDANA.**

- (78) P. R. R. Surv., vol. ix, p. 586; (632½) Birds of N. A., 1874, vol. ii, p. 285, pl. xi, fig. 4.

**Cyanocitta macrolopha.**

- (56) Pr. Acad. Nat. Sci. Phila., 1854, p. 118.

**CYANOCITTA WOODHOUSEI.**

- (78) P. R. R. Surv., vol. ix, p. 585; (87) Mex. Bound. Surv., vol. ii, p. 20; pl. xxi; (104) Birds of N. A., 1860, p. 585, pl. lix.

**CYANOCITTA SORDIDA.**

- (78) P. R. R. Surv., vol. ix, p. 587; (87) Mex. Bound. Surv., vol. ii, p. 21, pl. xxii, fig. 1; (104) Birds of N. A., 1860, p. 587, pl. lx, fig. 1.

**CYANOCITTA ULTRAMARINA.**

- (78) P. R. R. Surv., vol. ix, p. 588; (87) Mex. Bound. Surv., vol. ii, p. 21, pl. xxii, fig. 2; (104) Birds of N. A., 1860, p. 588, pl. lx, fig. 2.

**CYANOCITTA ULTRAMARINA ARIZONÆ.**

- (632½) Birds of N. A., 1874, vol. ii, p. 292, pl. xii, fig. 2.

**Cyanocitta ultramarina Couchi.**

- (632½) Birds of N. A., 1874, vol. ii, p. 293.

**Cyanocorax Cassinii.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**Cyanocorax coronatus.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**Cyanocorax luxuosus.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**Cyanopterus Rafflesii.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 334.

**Cyanoospiza.**

- (632½) Birds of N. A., 1874, vol. ii, p. 81.

**CYANOSPIZA AMERENA.**

- (78) P. R. R. Surv., vol. ix, p. 504; (632½) Birds of N. A., 1874, vol. ii, p. 84, pl. xxix, fig. 11, 12 (cuts, pp. 81, 84).

**Cyanoospiza ciris.**

- (78) P. R. R. Surv., vol. ix, p. 503; (87) Mex. Bound. Surv., vol. ii, p. 17; (632½) Birds of N. A., 1874, vol. ii, p. 87, pl. xxix, fig. 7 & 8.

**CYANOSPIZA CYANEA.**

- (78) P. R. R. Surv., vol. ix, p. 505; (632½) Birds of N. A., 1874, vol. ii, p. 82, pl. xxix, fig. 13, 14.

**CYANOSPIZA PARELLINA.**

- (78) P. R. R. Surv., vol. ix, p. 502; (87) Mex. Bound. Surv., vol. ii, p. 17, pl. xviii, fig. 1; (104) Birds of N. A., 1860, p. 562, pl. li, fig. 1.

**CYANOSPIZA VERSICOLOR.**

- (78) P. R. R. Surv., vol. ix, p. 503; (87) Mex. Bound. Surv., vol. ii, p. 17, pl. xviii, fig. 2; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 304; (104) Birds of N. A., 1860, p. 563, pl. lvi, fig. 2; (632½) Birds of N. A., 1874, vol. ii, p. 86, pl. xxix, figs. 9, 10.

**Cyanura.**

- (632½) Birds of N. A., 1874, vol. ii, p. 271; *Ibid.*, App., p. 518.

**CYANURA CRISTATA.**

- (78) P. R. R. Surv., vol. ix, p. 580; (632½) Birds of N. A., 1874, vol. ii, p. 273, pl. xlii, fig. 1 (cuts, pp. 271, 274).

**Cyanura macrolophus.**

- (78) P. R. R. Surv., vol. ix, p. 582.

**CYANURA STELLERI.**

- (78) P. R. R. Surv., vol. ix, p. 581; (632½) Birds of N. A., 1874, vol. ii, p. 277, pl. xxxix, fig. 1.

**CYANURA STELLERI FRONTALIS.**

- (632½) Birds of N. A., 1874, vol. ii, p. 278, pl. xxxix, fig. 2.

**CYANURA STELLERI MACROLOPHA.**

- (632½) Birds of N. A., 1874, vol. ii, p. 281, pl. xxxix, fig. 3.

**Cyclorhis.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 324; (115) Review of N. A. Birds, May, 1866, Part I, p. 384.

**Cyclorhis flavipectus.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 389.

**Cyclorhis flaviventris.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 384.

**Cyclorhis guianensis.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 389.



*Icthis nigritrostris.*

(115) Review of N. A. Birds, May, 1866, Part I, p. 304.

*Icthis ochrocephala.*

(115) Review of N. A. Birds, May, 1866, Part I, p. 301.

*Icthis subflavescens.*

(115) Review of N. A. Birds, May, 1866, Part I, p. 303.

*Icthis virenticeps.*

(115) Review of N. A. Birds, May, 1866, Part I, p. 303.

*Icthis viridis.*

(115) Review of N. A. Birds, May, 1866, Part I, p. 302.

*pass americanus.*

(81) Stansbury's Surv. Salt Lake [App. C], p. 321; (78) P. R. R. Surv., vol. ix, p. 758; (94, P. R. R. Surv., vol. x, p. 15.

*pass buccinator.*

(78) P. R. R. Surv., vol. ix, p. 758.

*phœbeus.*

(115) Review of N. A. Birds, Aug., 1864, Part I, p. 94; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 112.

*phœbeus Lawrencii.*

(115) Review of N. A. Birds, Aug., 1864, Part I, p. 113.

*psallda.*

(632½) Birds of N. A., 1874, vol. ii, p. 421.

*psallda.*

(632½) Birds of N. A., 1874, vol. ii, p. 423.

*psallda melanoleucus.*

(66) Proc. Acad. Nat. Sci. Phila., 1864, p. 113.

*tinnyx.*

(632½) Birds of N. A., 1874, vol. iii, p. 491.

*TOUSTY MAMSENA.*

(82) Stansbury's Surv. Salt Lake [App. C], p. 324; (78) P. R. R. Surv., vol. ix, p. 647; (87) Mex. Bound. Surv., vol. ii, p. 23; (632½) Birds of N. A., 1874, vol. iii, p. 492, pl. lxiv, fig. 3, 6 (cuts, pp. 491, 492).

*tropeolecanus erythrorhynchus.*

(78) P. R. R. Surv., vol. ix, p. 868.

*ACTIS CATANA.*

(115) Review of N. A. Birds, Aug., 1864, Part I, p. 163, fig. 4.

*alia acuta.*

(81) Stansbury's Surv. Salt Lake [App. C], p. 323; (78) P. R. R. Surv., vol. ix, p. 776; (87) Mex. Bound. Surv., vol. ii, p. 23.

*lyctia cespensia.*

(78) P. R. R. Surv., vol. ix, p. 823.

*umiegretta ludoviciana.*

(78) P. R. R. Surv., vol. ix, p. 663.

*umiegretta Pealii.*

(78) P. R. R. Surv., vol. ix, p. 661.

*umiegretta rufa.*

(78) P. R. R. Surv., vol. ix, p. 663; (87) Mex. Bound. Surv., vol. ii, p. 24.

*umiegretta arborea?*

(82) Stansbury's Surv. Salt Lake [App. C], p. 304.

*DENDROCYGNA AUTUMNALIS.*

(82) Stansbury's Surv. Salt Lake [App. C], p. 324; (78) P. R. R. Surv., vol. ix, p. 770; (87) Mex. Bound. Surv., vol. ii, p. 26; (104) Birds of N. A., 1860, p. 770, pl. lxiii, fig. 2.

*DENDROCYGNA FULVA.*

(78) P. R. R. Surv., vol. ix, p. 770; (104) Birds of N. A., 1860, p. 770, pl. lxiii, fig. 1.

*Dendroica.*

(115) Review of N. A. Birds, Apr., 1865, Part I, p. 182; *Ibid.*, p. 201; (632½) Birds of N. A., 1874, vol. i, p. 215.

*Dendroica Adalaida.*

(115) Review of N. A. Birds, Apr., 1865, Part I, p. 212.

*DENDROICA ÆSTIVA.*

(78) P. R. R. Surv., vol. ix, p. 283; (87) Mex. Bound. Surv., vol. ii, p. 10; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 195; (632½) Birds of N. A., 1874, vol. i, p. 222, pl. xiv, fig. 1.

*DENDROICA AUDUBONII.*

(78) P. R. R. Surv., vol. ix, p. 273; (87) Mex. Bound. Surv., vol. ii, p. 10; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 188; (632½) Birds of N. A., 1874, vol. i, p. 229, pl. xiii, fig. 1 (cut, p. 215); (632½) Birds of N. A., 1874, App., p. 505.

*Dendroica aureola.*

(115) Review of N. A. Birds, Apr., 1865, Part I, p. 192.

*DENDROICA BLACKBURNIÆ.*

(78) P. R. R. Surv., vol. ix, p. 274; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 189; (632½) Birds of N. A., 1874, vol. i, p. 237, pl. xiii, fig. 2; *Ibid.*, App., p. 505.

*Dendroica canadensis.*

(78) P. R. R. Surv., vol. ix, p. 271.

*Dendroica carbonata.*

(78) P. R. R. Surv., vol. ix, p. 287; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 207.

*DENDROICA CASTANEA.*

(78) P. R. R. Surv., vol. ix, p. 276; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 189; (632½) Birds of N. A., 1874, vol. i, p. 251, pl. xiii, figg. 4, 5; *Ibid.*, App., p. 505.

*DENDROICA CHRYSOPAREIA.*

(115) Review of N. A. Birds, Apr., 1865, Part I, pp. 183, 267; (632½) Birds of N. A., 1874, vol. i, p. 260, pl. xii, fig. 6.

*DENDROICA CÆRULEA.*

(78) P. R. R. Surv., vol. ix, p. 280; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 191; (632½) Birds of N. A., 1874, vol. i, p. 235, pl. xiii, figg. 10, 11; *Ibid.*, 11; App., p. 505.

*Dendroica cærulescens.*

(115) Review of N. A. Birds, Apr., 1865, Part I, p. 186; (632½) Birds of N. A., 1874, vol. i, p. 254, pl. xii, figg. 10, 11.

*DENDROICA CORONATA.*

(78) P. R. R. Surv., vol. ix, p. 272; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 187; (632½) Birds of N. A., 1874, vol. i, p. 227, pl. xii, fig. 9 (cut, p. 215).

**DENDROICA DISCOLOR.**

- (78) P. R. R. Surv., vol. ix, p. 290; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 213; (632½) Birds of N. A., 1874, vol. i, p. 276, pl. xiv, fig. 6.

**DENDROICA DOMINICA.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 209; (632½) Birds of N. A., 1874, vol. i, p. 240, pl. xiv, figg. 6, 7; *Ibid.*, App., p. 505.

**Dendroica dominica albiflora.**

- (632½) Birds of N. A., 1874, App., p. 505.

**Dendroica eoa.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 192.

**DENDROICA GRACILE.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 210; (632½) Birds of N. A., 1874, vol. i, p. 243, pl. xiv, fig. 10.

**Dendroica Gracilis decora.**

- (632½) Birds of N. A., 1874, App., p. 505.

**Dendroica Gundlachi.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 197.

**DENDROICA KIRTLANDII.**

- (78) P. R. R. Surv., vol. ix, p. 286; (115) Review N. A. Birds, Apr., 1865, Part I, p. 206; (632½) Birds of N. A., 1874, vol. i, p. 272, pl. xiv, fig. 5.

**DENDROICA MACULOSA.**

- (78) P. R. R. Surv., vol. ix, p. 284; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 206; (632½) Birds of N. A., 1874, vol. i, p. 232, pl. xiv, fig. 2.

**DENDROICA MONTANA.**

- (78) P. R. R. Surv., vol. ix, p. 278; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 190; (632½) Birds of N. A., 1874, vol. i, p. 271, pl. xiv, fig. 3.

**DENDROICA NIGRESCENS.**

- (78) P. R. R. Surv., vol. ix, p. 270; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 186; (632½) Birds of N. A., 1874, vol. i, p. 258, pl. xii, fig. 8; *Ibid.*, App., p. 506.

**DENDROICA OCCIDENTALIS.**

- (78) P. R. R. Surv., vol. ix, p. 268; (115) Review N. A. Birds, Apr., 1865, Part I, p. 183; (632½) Birds of N. A., 1874, vol. i, p. 266, pl. xii, fig. 5; App., p. 506.

**DENDROICA OLIVACEA.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 205; (632½) Birds of N. A., 1874, vol. i, p. 258, pl. xiv, fig. 4.

**DENDROICA PALMARUM.**

- (78) P. R. R. Surv., vol. ix, p. 288; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 207; (632½) Birds of N. A., 1874, vol. i, p. 273, pl. xiv, fig. 8.

**DENDROICA PENNSYLVANICA.**

- (78) P. R. R. Surv., vol. ix, p. 279; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 191; (632½) Birds of N. A., 1874, vol. i, p. 245, pl. xiii, figg. 7, 8.

**Dendroica petechia.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 198.

**Dendroica pharetra.**

- (115) Review of N. A. Birds, Apr., p. 192.

**DENDROICA PINUS.**

- (78) P. R. R. Surv., vol. ix, p. 277; ( of N. A. Birds, Apr., 1865, Part I, p. 213; (632½) Birds of N. A., 1874, vol. i, p. 276, pl. xiv, fig. 6.

**Dendroica pityophila.**

- (115) Review of N. A. Birds, Apr., p. 208.

**Dendroica rufigula.**

- (115) Review of N. A. Birds, Apr., p. 204.

**DENDROICA STRIATA.**

- (78) P. R. R. Surv., vol. ix, p. 280; ( of N. A. Birds, Aug., 1864, Part 6; *Ibid.*, Apr., 1865, Part I, p. 206; (632½) Birds of N. A., 1874, vol. i, p. 272, pl. xiv, fig. 9.

**Dendroica superciliosa.**

- (78) P. R. R. Surv., vol. ix, p. 289 Bound. Surv., vol. ii, p. 10.

**Dendroica tigrina.**

- (78) P. R. R. Surv., vol. ix, p. 286.

**DENDROICA TOWNSENDII.**

- (78) P. R. R. Surv., vol. ix, p. 269; ( of N. A. Birds, Apr., 1865, Part I, p. 206; (632½) Birds of N. A., 1874, vol. i, p. 272, pl. xiv, fig. 7; *Ibid.*, App., p. 506.

**Dendroica Vieillotii.**

- (115) Review of N. A. Birds, Apr., p. 203.

**Dendroica Vieillotii Bryanti.**

- (632½) Birds of N. A., 1874, App., p. 506.

**DENDROICA VIRENS.**

- (78) P. R. R. Surv., vol. ix, p. 287; Bound. Surv., vol. ii, p. 10; (115) N. A. Birds, Apr., 1865, Part I, p. 190; (632½) Birds of N. A., 1874, vol. i, p. 261.

**Diomedea brachyura.**

- (78) P. R. R. Surv., vol. ix, p. 822.

**Diomedea chlororhynchos.**

- (78) P. R. R. Surv., vol. ix, p. 822.

**Diomedea (Diomedea) exulans.**

- (78) P. R. R. Surv., vol. ix, p. 821.

**Diomedea fuliginosa.**

- (78) P. R. R. Surv., vol. ix, p. 822.

**Dolichonyx.**

- (632½) Birds of N. A., 1874, vol. ii, p. 261.

**Dolichonyx oryzivorus.**

- (78) P. R. R. Surv., vol. ix, p. 622; ( of N. A., 1874; *Ibid.*, App., p. 506.

**Donacobius.**

- (115) Review of N. A. Birds, June, 1 p. 5; *Ibid.*, July, 1864, Part I, p. 57.

**Donacobius albo-vittatus.**

- (115) Review of N. A. Birds, July, 1 p. 57.

**Donacobius atricapillus.**

- (115) Review of N. A. Birds, July, 1 p. 57.

**Dulma.**

- (115) Review of N. A. Birds, May, 1 p. 461.

**Dulus.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 401.

**Dulus dominicus.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 403.

**Dyctiopterus Nuttalli.**

- (78) P. R. R. Surv., vol. ix, p. 93.

**Dyctiopterus scalaris.**

- (78) P. R. R. Surv., vol. ix, p. 84.

**Dysperus fiber.**

- (78) P. R. R. Surv., vol. ix, p. 372.

**Ectopistes.**

- (632½) Birds of N. A., 1874, vol. iii, p. 367.

**Ectopistes migratoria.**

- (78) P. R. R. Surv., vol. ix, p. 600; (632½) Birds of N. A., 1874, vol. iii, p. 368, pl. lvii, fig. 4 (cuts, pp. 368, 369).

**Elanus.**

- (632½) Birds of N. A., 1874, vol. iii, p. 196.

**Elanus leucurus.**

- (78) P. R. R. Surv., vol. ix, p. 37; (632½) Birds of N. A., 1874, vol. iii, p. 198 (cuts, pp. 198, 200).

**Emberiza Bairdii.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 330.

**Emberiza Belli.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**Emberiza bilineata.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 330.

**Emberiza Lecontei.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 330.

**Embernagra.**

- (632½) Birds of N. A., 1874, vol. ii, p. 46.

**Embernagra Blandingiana.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 330.

**EMBERNAGRA RUPIVIRGATA.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 330; (78) P. R. R. Surv., vol. ix, p. 487; (87) Mex. Bound. Surv., vol. ii, p. 16, pl. xvii, fig. 3; (104) Birds of N. A., 1860, p. 373, pl. iv, fig. 2; (632½) Birds of N. A., 1874, vol. ii, p. 47, pl. xxviii, fig. 3 (cuts, pp. 47, 48).

**Empidonax.**

- (632½) Birds of N. A., 1874, vol. ii, p. 362.

**EMPIDONAX ACADICUS.**

- (78) P. R. R. Surv., vol. ix, p. 197; (632½) Birds of N. A., 1874, vol. ii, p. 374, pl. xlv, fig. 11, (cut, p. 362).

**Empidonax brunneus.**

- (632½) Birds of N. A., 1874, App., p. 519.

**EMPIDONAX DIFFICILIS.**

- (104) Birds of N. A., 1860, p. 198, pl. lxxvi, fig. 2.

**EMPIDONAX FLAVIVENTRIS.**

- (78) P. R. R. Surv., vol. ix, p. 198; (632½) Birds of N. A., 1874, vol. ii, p. 378, pl. xlv, fig. 12. — *flaviventris difficilis*. — Birds of N. A., 1874, vol. ii, p. 380.

**EMPIDONAX HAMMONDII.**

- (78) P. R. R. Surv., vol. ix, p. 199; (104) Birds of N. A., 1860, p. 199, pl. lxxv, fig. 1; (632½) Birds of N. A., 1874, vol. ii, p. 383, pl. xlv, fig. 7.

**EMPIDONAX MINIMUS.**

- (78) P. R. R. Surv., vol. ix, p. 195; (632½) Birds of N. A., 1874, vol. ii, p. 372, pl. xlv, fig. 10; *Ibid.*, App., p. 519.

**EMPIDONAX OBSCURUS.**

- (78) P. R. R. Surv., vol. ix, p. 200; (87) Mex. Bound. Surv., vol. ii, p. 9, pl. xi, fig. 3; (99) Proc. Acad. Nat. Sci. Phila., 1859 (1860), p. 303; (104) Birds of N. A., 1860, p. 200, pl. xlix, fig. 3; (632½) Birds of N. A., 1874, vol. ii, p. 381, pl. xlv, fig. 6; *Ibid.*, App., p. 520.

**EMPIDONAX FUSILLUS.**

- (78) P. R. R. Surv., vol. ix, p. 194; (87) Mex. Bound. Surv., vol. ii, p. 9; (632½) Birds of N. A., 1874, vol. ii, p. 366, pl. xlv, fig. 9 (cuts, p. 366).

**EMPIDONAX FUSILLUS TRAILLI.**

- (632½) Birds of N. A., 1874, vol. ii, p. 369, pl. xlv, fig. 8.

**Empidonax Traillii.**

- (78) P. R. R. Surv., vol. ix, p. 193.

**Eremophila.**

- (632½) Birds of N. A., 1874, vol. ii, p. 139.

**EREMOPHILA ALPESTRIS.**

- (632½) Birds of N. A., 1874, vol. ii, p. 141, pl. xxxii, figs. 1, 2 (cuts, pp. 139, 140).

**EREMOPHILA CORNUATA.**

- (78) P. R. R. Surv., vol. ix, p. 403; (87) Mex. Bound. Surv., vol. ii, p. 14; (94) P. R. R. Surv., vol. x, p. 13, pl. xxxii.

**Ereunetes petrificatus.**

- (78) P. R. R. Surv., vol. ix, p. 724.

**Ergaticus.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 237; *Ibid.*, p. 238; *Ibid.*, May, 1865, Part I, p. 264 (237).

**ERISMATURA DOMINICA.**

- (78) P. R. R. Surv., vol. ix, p. 811; (104) Birds of N. A., 1860, p. 811, pl. xcii, fig. 1, male; fig. 2 female.

**Eriematura rubida.**

- (78) P. R. R. Surv., vol. ix, p. 811; (87) Mex. Bound. Surv., vol. ii, p. 27.

**Erolia subarquata.**

- (78) P. R. R. Surv., vol. ix, p. 718.

**EUPHONIA ELEGANTISSIMA.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 330; (78) P. R. R. Surv., vol. ix, p. 304; (104) Birds of N. A., 1860, p. 304, pl. lxxi, figs. 2, 3.

**Eupiza.**

- (632½) Birds of N. A., 1874, vol. ii, p. 65.

**EUSPIZA AMERICANA.**

- (78) P. R. R. Surv., vol. ix, p. 494; (632½) Birds of N. A., 1874, vol. ii, p. 65, pl. xxviii, figs. 11, 12 (cuts, pp. 53, 56); *Ibid.*, 1874, App., p. 516.

**Euspiza arctica.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**EUSPIZA TOWNSENDII.**

- (78) P. R. R. Surv., vol. ix, p. 495; (632½) Birds of N. A., 1874, vol. ii, p. 68, pl. xxviii, fig. 68.

**Euthlypia.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 237; *Ibid.*, p. 238; *Ibid.*, May, 1865, Part I, p. 262.

**Falcinellus Ordii.**

- (78) P. R. R. Surv., vol. ix, p. 685.

**FALCO.**

- (632½) Birds of N. A., 1874, vol. iii, p. 106 (cut, p. 106).

**Falco (Falco) anatum.**

- (78) P. R. R. Surv., vol. ix, p. 7.

**Falco aurantius.**

- (78) P. R. R. Surv., vol. ix, p. 10; (87) Mex. Bound. Surv., vol. ii, p. 3.

**Falco candicans.**

- (78) P. R. R. Surv., vol. ix, p. 13.

**Falco columbarius.**

- (78) P. R. R. Surv., vol. ix, p. 9; (87) Mex. Bound. Surv., vol. ii, p. 3.

**Falco communis anatum.**

- (632½) Birds of N. A., 1874, vol. iii, p. 132.

**Falco communis Pealei.**

- (632½) Birds of N. A., 1874, vol. iii, p. 137.

**FALCO FEMORALIS.**

- (78) P. R. R. Surv., vol. ix, p. 11; (87) Mex. Bound. Surv., vol. ii, p. 8; (632½) Birds of N. A., 1874, vol. iii, p. 155 (cuts, pp. 154, 155, 157).

**FALCO GYRFALCO CANDICANS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 111 (cut, p. 112).

**FALCO GYRFALCO ISLANDICUS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 113 (cut, p. 114).

**Falco gyrfalco labrador.**

- (632½) Birds of N. A., 1874, vol. iii, p. 117.

**FALCO GYRFALCO SACER.**

- (632½) Birds of N. A., 1874, vol. iii, p. 115 (cut, p. 110); *Ibid.*, App., p. 522 (cut).

**Falco islandicus.**

- (78) P. R. R. Surv., vol. ix, p. 13.

**FALCO LANARIUS POLYAGRUS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 123 (cuts, pp. 110, 124); *Ibid.*, App., p. 522 (cut).

**FALCO LITHOFALCO COLUMBARIUS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 144 (cut, p. 146).

**Falco lithofalco Richardsons.**

- (632½) Birds of N. A., 1874, vol. iii, p. 148.

**Falco lithofalco Suckleyi.**

- (632½) Birds of N. A., 1874, vol. iii, p. 147.

**Falco (Falco) nigriceps.**

- (78) P. R. R. Surv., vol. ix, p. 8.

**FALCO NIGRICEPS.**

- (104) Birds of N. A., 1860, p. 8, pl. xi.

**Falco polyagrus.**

- (78) P. R. R. Surv., vol. ix, p. 12.

**FALCO RICHARDSONI.**

- (632½) Birds of N. A., 1874, App., p. 522 (cut).

**Falco sparverius.**

- (31-a) Stansbury's Surv. Salt Lake [App. C], p. 325; (78) P. R. R. Surv., vol. ix, p. 13; (87) Mex. Bound. Surv., vol. ii, p. 3.

**Falco sparverius Isabellinus.**

- (632½) Birds of N. A., 1874, vol. iii, p. 171.

**FALCO SPARVERIUS SPARVERIUS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 169 (cuts, pp. 150, 173).

**Falconidae.**

- (632½) Birds of N. A., 1874, vol. iii, p. 163; *Ibid.*, App., p. 522.

**Falconine.**

- (632½) Birds of N. A., 1874, vol. iii, p. 166.

**Florida œrula.**

- (78) P. R. R. Surv., vol. ix, p. 671; (87) Mex. Bound. Surv., vol. ii, p. 24.

**Fratercula arctica.**

- (78) P. R. R. Surv., vol. ix, p. 903.

**Fratercula corniculata.**

- (78) P. R. R. Surv., vol. ix, p. 902.

**Fratercula glacialis.**

- (78) P. R. R. Surv., vol. ix, p. 903.

**Fregatta Lawrencii.**

- (78) P. R. R. Surv., vol. ix, p. 832.

**Fringillidae.**

- (632½) Birds of N. A., 1874, vol. i, p. 446.

**Fringilla meruloides.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 330.

**Fulica americana.**

- (78) P. R. R. Surv., vol. ix, p. 731; (87) Mex. Bound. Surv., vol. ii, p. 26; (94) P. R. R. Surv., vol. x, p. 15; (90) Pr. Acad. Nat. Sci. Phila., 1859, p. 303.

**Fuligula affinis.**

- (31) Stansbury's Surv. Salt Lake [App. C], p. 324.

**Fulix affinis.**

- (78) P. R. R. Surv., vol. ix, p. 791.

**Fulix collaris.**

- (78) P. R. R. Surv., vol. ix, p. 792; (87) Mex. Bound. Surv., vol. ii, p. 27.

**Fulix marila.**

- (78) P. R. R. Surv., vol. ix, p. 791.

**Fulmarus glacialis.**

- (78) P. R. R. Surv., vol. ix, p. 825.

**Fulmarus Rodgersi.**

- (129) Chicago Acad. Sci., 1869, p. 323.

**Galbulidae.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 165.

**Galeoscoptes.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 5; (632½) Birds of N. A., 1874, vol. i, p. 51; (115) Review of N. A. Birds, July, 1864, Part I, p. 54.

**GALEOSCOPTES CAROLINENSIS.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 54; (632½) Birds of N. A., 1874, vol. i, p. 52, pl. iii, fig. 5 (cuts, p. 53).

**Gallinago Wilsonii.**

- (78) P. R. R. Surv., vol. ix, p. 710; (87) Mex. Bound. Surv., vol. ii, p. 23.

**Gallinula (Gallinula) galeata.**

- (78) P. R. R. Surv., vol. ix, p. 732.

**Gallinula galeata.**

- (87) Mex. Bound. Surv., vol. ii, p. 23.

**Gallinula martinica.**

- (78) P. R. R. Surv., vol. ix, p. 733.

*Gambetta flavipes.*

- (76) P. R. R. Surv., vol. ix, p. 782; (87) Mex. Bound. Surv., vol. ii, p. 25.

*Gambetta melanoleuca.*

- (78) P. R. R. Surv., vol. ix, p. 781; (87) Mex. Bound. Surv., vol. ii, p. 25.

*Garrulinae.*

- (632½) Birds of N. A., 1874, vol. ii, p. 263.

*Garrulus Californicus.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 333.

*Garrulus candidissima.*

- (78) P. R. R. Surv., vol. ix, p. 665; (87) Mex. Bound. Surv., vol. ii, p. 24.

*Garrulus thula.*

- (90) Fr. Acad. Nat. Sci. Phila., 1859, p. 305.

*Genala polyagrus.*

- (78) P. R. R. Surv., vol. ix, p. 12.

*Geococcyx.*

- (632½) Birds of N. A., 1874, vol. ii, p. 470.

*Geococcyx affinis.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 333.

*GEOCOCCYX CALIFORNIANUS.*

- (78) P. R. R. Surv., vol. ix, p. 78; (87) Mex. Bound. Surv., vol. ii, p. 5; (632½) Birds of N. A., 1874, vol. ii, p. 472, pl. xiviii, fig. 1 (outs, pp. 471, 472.); *Ibid.*, App., p. 521.

*Geococcyx californicus.*

- (90) Fr. Acad. Nat. Sci. Phila., 1859 (1860), p. 303.

*Geococcyx vitiensis.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 333.

*Geothlypis.*

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 166.

*Geothlypis.*

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 166; *Ibid.*, Apr., 1865, Part I, p. 213; *Ibid.*, p. 214; (632½) Birds of N. A., 1874, vol. i, p. 276.

*Geothlypis.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 219; *Ibid.*, p. 227; (632½) Birds of N. A., 1874, vol. i, p. 295; *Ibid.*, App., p. 507.

*Geothlypis squameocephala.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 224.

*Geothlypis MACGILLIVRAI.*

- (78) P. R. R. Surv., vol. ix, p. 244; (87) Mex. Bound. Surv., vol. ii, p. 10; (104) Birds of N. A., 1860, p. 244, pl. lxxix, fig. 4; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 227; (632½) Birds of N. A., 1874, vol. i, p. 303, pl. xv., figg. 4, 5; *Ibid.*, App., p. 507.

*Geothlypis melanopa.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 222.

*Geothlypis PHILADELPHIA.*

- (78) P. R. R. Surv., vol. ix, p. 243; (104) Birds of N. A., 1860, p. 248, pl. lxxix, fig. 3; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 226; (632½) Birds of N. A., 1874, vol. i, p. 301, pl. xv, fig. 2.

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*Geothlypis poliocephala.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 225.

*Geothlypis semiflavus.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 223.

*Geothlypis speciosa.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 223.

*Geothlypis TRICHAS.*

- (78) P. R. R. Surv., vol. ix, p. 241; (87) Mex. Bound. Surv., vol. ii, p. 10; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 219; (632½) Birds of N. A., 1874, vol. i, p. 297, pl. xv, figg. 7, 8 (cuts, pp. 297, 298); (632½) Birds of N. A., 1874, App., p. 507.

*Geothlypis velata.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 223.

*Geothlypis velatus.*

- (78) P. R. R. Surv., vol. ix, p. 243.

*Glaucidium.*

- (632½) Birds of N. A., 1874, vol. iii, p. 79.

*GLAUCIDIUM FERRUGINEUM.*

- (632½) Birds of N. A., 1874, vol. iii, p. 85 (outs, pp. 88, 99, 100, 101).

*Glaucidium gnomia.*

- (78) P. R. R. Surv., vol. ix, p. 62.

*GLAUCIDIUM PASSERINUM CALIFORNICUM.*

- (632½) Birds of N. A., 1874, vol. iii, p. 81 (outs, pp. 80, 83).

*Glossiphila RUFICOLLIS.*

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 163, fig. 1.

*Glottis floridanus.*

- (78) P. R. R. Surv., vol. ix, p. 730.

*Goniaphea ludoviciana.*

- (78) P. R. R. Surv., vol. ix, p. 497.

*Goniaphea melanocephala.*

- (78) P. R. R. Surv., vol. ix, p. 498.

*GRACULUS BICRISTATUS.*

- (129) Chicago Acad. Sci., 1869, p. 321, pl. xxxiii.

*Graculus carbo.*

- (78) P. R. R. Surv., vol. ix, p. 876.

*Graculus cinnamomeus.*

- (78) P. R. R. Surv., vol. ix, p. 877.

*Graculus dilophus.*

- (78) P. R. R. Surv., vol. ix, p. 877; (99) Proc. Acad. Nat. Sci. Phila., 1859, p. 306.

*Graculus floridanus.*

- (78) P. R. R. Surv., vol. ix, p. 879.

*GRACULUS MEXICANUS.*

- (78) P. R. R. Surv., vol. ix, p. 879; (187) Mex. Bound. Surv., vol. ii, p. 28; (104) Birds of N. A., 1860, p. 279, pl. xcvi.

*GRACULUS PENICILLATUS.*

- (78) P. R. R. Surv., vol. ix, p. 880; (104) Birds of N. A., 1860, p. 280, pl. xi.

*Graculus perisphinctus.*

- (78) P. R. R. Surv., vol. ix, p. 877.

*Graculus violaceus.*

- (78) P. R. R. Surv., vol. ix, p. 881.

*Granatellus.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 230.

*Granatellus crenatus.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 230.

*Granatellus francesca.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 232.

*Granatellus Pelzelni.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 230.

*Granatellus Sallaei.*

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 232.

*Grus americana.*

- (78) P. R. R. Surv., vol. ix, p. 654.

*Grus canadensis.*

- (31) Stansbury's Surv. Salt Lake [App. C], p. 319; (78) P. R. R. Surv., vol. ix, p. 655; (87) Mex. Bound. Surv., vol. ii, p. 24; (94) P. R. R. Surv., vol. x, p. 14.

*Grus fraterculus.*

- (78) P. R. R. Surv., vol. ix, p. 656; (104) Birds of N. A., 1860, p. 656, pl. xxxvii.

*Guiraca.*

- (632½) Birds of N. A., 1874, vol. ii, p. 76.

*GUIRACA CÆRULEA.*

- (78) P. R. R. Surv., vol. ix, p. 499; (87) Mex. Bound. Surv., vol. ii, p. 16; (632½) Birds of N. A., 1874, vol. ii, p. 77, pl. xxix, figs. 4, 5 (cuts, p. 77); *Ibid.*, App., p. 516.

*Guiraca ludoviciana.*

- (78) P. R. R. Surv., vol. ix, p. 497.

*Guiraca melanocephala.*

- (78) P. R. R. Surv., vol. ix, p. 498; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 304.

*Gymnokitta.*

- (632½) Birds of N. A., 1874, vol. ii, p. 259.

*GYMNOKITTA CYANOCEPHALA.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 574; (632½) Birds of N. A., 1874, vol. ii, p. 260 (cuts, pp. 259, 260).

*Hæmatopus ater.*

- (78) P. R. R. Surv., vol. ix, p. 700.

*Hæmatopus niger.*

- (78) P. R. R. Surv., vol. ix, p. 700.

*Hæmatopus palliatus.*

- (78) P. R. R. Surv., vol. ix, p. 699.

*Haliaetus.*

- (632½) Birds of N. A., 1874, vol. iii, p. 320.

*HALIÆTUS ALBICILLA.*

- (78) P. R. R. Surv., vol. ix, p. 43; (632½) Birds of N. A., 1874, vol. iii, p. 324 (cut, p. 365).

*HALIÆTUS LEUCOCEPHALUS.*

- (78) P. R. R. Surv., vol. ix, p. 43; (632½) Birds of N. A., 1874, vol. iii, p. 326 (cuts, pp. 312, 321, 323, 330).

*Haliaetus pelagicus.*

- (78) P. R. R. Surv., vol. ix, p. 42.

*Haliaetus Washingtonii.*

- (78) P. R. R. Surv., vol. ix, p. 42.

*Harelda glacialis.*

- (78) P. R. R. Surv., vol. ix, p. 800.

*Harporhynchus.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 5; *Ibid.*, p. 43; (632½) Birds of N. A., 1874, vol. i, p. 35.

*Harporhynchus Bendirei.*

- (632½) Birds of N. A., 1874, App., p. 1.

*HARPORHYNCHUS CINEREUS.*

- (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 115; (115) Review of N. A. Birds, Part I, p. 46; (632½) Birds of N. A., vol. i, p. 40, pl. iv, fig. 2.

*HARPORHYNCHUS CRISTATUS.*

- (78) P. R. R. Surv., vol. ix, p. 351; (10) N. A., 1860, p. 351, pl. lxxxii; (11) of N. A. Birds, July, 1864, Part I, p. 46; (632½) Birds of N. A., 1874, vol. iv, fig. 1; *Ibid.*, App., p. 500.

*HARPORHYNCHUS CURVIROSTRIS.*

- (78) P. R. R. Surv., vol. ix, p. 351; Bound. Surv., vol. ii, p. 12, pl. 1; Birds of N. A., 1860, p. 351, pl. ii; view of N. A. Birds, July, 1864, p. 45; (632½) Birds of N. A., 1874, vol. iii, fig. 3.

*Harporhynchus curvirostris Palmeri.*

- (632½) Birds of N. A., 1874, vol. i, p. App., p. 500.

*HARPORHYNCHUS LECONTII.*

- (78) P. R. R. Surv., vol. ix, p. 350; Bound. Surv., vol. ii, p. 12, pl. 1; Birds of N. A., 1860, p. 350, pl. i; view of N. A. Birds, July, 1864, p. 47.

*HARPORHYNCHUS LONGIROSTRIS.*

- (78) P. R. R. Surv., vol. ix, p. 352; Bound. Surv., vol. ii, p. 13, pl. 1; Birds of N. A., 1860, p. 352, pl. iii; view of N. A. Birds, July, 1864, p. 44.

*HARPORHYNCHUS REDIVIVUS.*

- (78) P. R. R. Surv., vol. ix, p. 349; (11) of N. A. Birds, July, 1864, Part I, p. 46; (632½) Birds of N. A., 1874, vol. pl. iv, fig. 4; *Ibid.*, App., p. 501 (cut).

*HARPORHYNCHUS REDIVIVUS LECONTII.*

- (632½) Birds of N. A., 1874, vol. i, p. fig. 3.

*HARPORHYNCHUS RUFUS.*

- (78) P. R. R. Surv., vol. ix, p. 353; (11) of N. A. Birds, July, 1864, Part I, p. 46; (632½) Birds of N. A., 1874, vol. iii, fig. 1 (cuts, p. 25); *Ibid.*, p. 500.

*HARPORHYNCHUS RUFUS LONGIROSTRIS.*

- (632½) Birds of N. A., 1874, vol. i, p. fig. 2.

*Harporhynchus ocellatus.*

- (115) Review of N. A. Birds, July, I, p. 59; (632½) Birds of N. A., II, p. 490.

*Harporhynchus vetula.*

- (78) P. R. R. Surv., vol. ix, p. 352.

*Hedymeles.*

- (632½) Birds of N. A., 1874, vol. ii, p. 6.

*HEDYMELES LUDOVICIANUS.*

- (632½) Birds of N. A., 1874, vol. ii, p. 7 fig. 4, 5.

*HEDYMELES MELANOCEPHALUS.*

- (632½) Birds of N. A., 1874, vol. ii, p. 7 fig. 1, 2 (cuts, pp. 60, 71).

**Halodryas.**

- (115) Review of N. A. Birds, Aug., 1874, Part I, p. 94; *Ibid.*, p. 95.

**Halodryas griseus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 84.

**Helopodica.**

- (632) Birds of N. A., 1874, vol. ii, p. 466.

**HELOPODICA XANTHUS.**

- (632) Birds of N. A., 1874, vol. ii, p. 467, pl. xviii, fig. 3 (cuts, pp. 466, 467).

**Helminthophaga.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 173; (632) Birds of N. A., 1874, vol. i, p. 191.

**HELMINTHOPHAGA BACHMANI.**

- (78) P. R. R. Surv., vol. ix, p. 255; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 175; (632) Birds of N. A., 1874, vol. i, p. 194, pl. xi, fig. 3.

**HELMINTHOPHAGA CELATA.**

- (76) P. R. R. Surv., vol. ix, p. 257; (87) Mex. Bound. Surv., vol. ii, p. 10; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 163, fig. 7; *Ibid.*, p. 176.

**HELMINTHOPHAGA CELATA CELATA.**

- (632) Birds of N. A., 1874, vol. i, p. 202, pl. xi, figs. 4, 5, 6 (cut, p. 192).

**Helminthophaga celata lutescens.**

- (632) Birds of N. A., 1874, vol. i, p. 204; *Ibid.*, App., p. 504.

**HELMINTHOPHAGA CHRYSOPTERA.**

- (76) P. R. R. Surv., vol. ix, p. 255; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 175; (632) Birds of N. A., 1874, vol. i, p. 192, pl. xi, fig. 2.

**HELMINTHOPHAGA LUCIE.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 178; (632) Birds of N. A., 1874, vol. i, p. 200, pl. xi, fig. 9; *Ibid.*, App., p. 504.

**HELMINTHOPHAGA PEREGRINA.**

- (76) P. R. R. Surv., vol. ix, p. 258; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 178; (632) Birds of N. A., 1874, vol. i, p. 205, pl. xi, figs. 10, 11; *Ibid.*, App., p. 504.

**HELMINTHOPHAGA PINUS.**

- (78) P. R. R. Surv., vol. ix, p. 254; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 174; (632) Birds of N. A., 1874, vol. i, p. 195, pl. xi, fig. 1.

**HELMINTHOPHAGA RUFCAPILLA.**

- (78) P. R. R. Surv., vol. ix, p. 256; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 175; (632) Birds of N. A., 1874, vol. ii, p. 196, pl. xi, figs. 7, 8 (cut, p. 191).

**HELMINTHOPHAGA VIRGINIE.**

- (104) Birds of N. A., 1860, p. 249, pl. lxxix, fig. 1; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 177; (632) Birds of N. A., 1874, vol. i, p. 199, pl. xi, fig. 12; *Ibid.*, App., p. 504.

**Helmitheus.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 179; (632) Birds of N. A., 1874, vol. i, p. 194.

**HELMITHEUS SWAINSONII.**

- (78) P. R. R. Surv., vol. ix, p. 252; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 180, (632) Birds of N. A., 1874, vol. i, p. 190, pl. x, fig. 9; *Ibid.*, App., p. 504.

**HELMITHEUS VERMIVORUS.**

- (78) P. R. R. Surv., vol. ix, p. 252; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 179; (632) Birds of N. A., 1874, vol. i, p. 187, pl. x, fig. 10 (cuts, p. 186); *Ibid.*, App., p. 504.

**Helospiza Lincolnii.**

- (78) P. R. R. Surv., vol. ix, p. 482.

**Helospiza palustris.**

- (78) P. R. R. Surv., vol. ix, p. 483.

**Herodias egretta.**

- (78) P. R. R. Surv., vol. ix, p. 606; (87) Mex. Bound. Surv., vol. ii, p. 24.

**Herodias egretta californica.**

- (78) P. R. R. Surv., vol. ix, p. 607.

**Hesperiphona.**

- (632) Birds of N. A., 1874, vol. i, p. 448.

**HESPERIPHONA VESPERTINA.**

- (78) P. R. R. Surv., vol. ix, p. 409; (632) Birds of N. A., 1874, vol. i, p. 449, pl. xxii, figs. 1, 4 (cuts, pp. 448, 450).

**Hesperiphona vespertina montana.**

- (632) Birds of N. A., 1874, App., p. 508.

**Hesperocichla.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 12; *Ibid.*, p. 32.

**Heterorhina.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 94; *Ibid.*, 115 (95, 114).

**Heterorhina griseicollis.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 117.

**Heterorhina leucophrys.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 118.

**Heterorhina prosthaleuca.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 116.

**Heterorhina pusilla.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 119.

**HETEROSCELES BREVIFES.**

- (78) P. R. R. Surv., vol. ix, p. 734; (104) Birds of N. A., 1860, p. 734, pl. lxxxviii.

**Hierofalco candicans.**

- (78) P. R. R. Surv., vol. ix, p. 13.

**HIKROFALCO GYRFALCO CANDICANS.**

- (632) Birds of N. A., 1874, vol. iii, p. 111 (cut, p. 112).

**HIKROFALCO GYRFALCO ISLANDICUS.**

- (632) Birds of N. A., 1874, vol. iii, p. 113 (cut, p. 114).

**Hierofalco gyrfalco labradora.**

- (632) Birds of N. A., 1874, vol. iii, p. 117.

**HIKROFALCO GYRFALCO SACKII.**

- (632) Birds of N. A., 1874, vol. iii, p. 115 (cut, p. 110).

**Hierofalco islandicus.**

- (78) P. R. R. Surv., vol. ix, p. 13.

- Himantopus nigricollis*.  
(78) P. R. R. Surv., vol. ix, p. 704; (87) Mex. Bound. Surv., vol. ii, p. 25.
- Hirundinidae*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 185. *Ibid.*, May, 1865, Part I, p. 267; (632½) Birds of N. A., 1874, vol. i, p. 326.
- Hirundo*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 270; *Ibid.*, p. 271; *Ibid.*, p. 293; *Ibid.*, p. 294; (632½) Birds of N. A., 1874, vol. i, p. 338.
- Hirundo albilinea*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 300.
- Hirundo albiventris*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 302.
- Hirundo andecola*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 320.
- HIRUNDO BICOLOR*.  
(78) P. R. R. Surv., vol. ix, p. 810; (87) Mex. Bound. Surv., vol. ii, p. 11; (115) Review of N. A. Birds, May, 1865, Part I, p. 296; (632½) Birds of N. A., 1874, vol. i, p. 844, pl. xvi, fig. 10 (cut, p. 345).
- Hirundo cyaneoviridis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 303.
- Hirundo erythrogastrus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 295.
- Hirundo euchrysea*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 304.
- HIRUNDO HORREORUM*.  
(78) P. R. R. Surv., vol. ix, p. 308; (87) Mex. Bound. Surv., vol. ii, p. 11; (115) Review of N. A. Birds, May, 1865, Part I, p. 294; (632½) Birds of N. A., 1874, vol. i, p. 339, pl. xvi, fig. 9 (cuts, pp. 338, 339).
- Hirundo leucorhoa*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 301.
- Hirundo lunifrons*.  
(78) P. R. R. Surv., vol. ix, p. 309.
- Hirundo maculosa*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 320.
- Hirundo Meyeni*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 302.
- HIRUNDO THALASSINA*.  
(78) P. R. R. Surv., vol. ix, p. 311; (87) Mex. Bound. Surv., vol. ii, p. 11; (99) Pr. Acad. Nat. Sci. Phila., 1859 (1860), p. 303; (115) Review of N. A. Birds, May, 1865, Part I, p. 299; (632½) Birds of N. A., 1874, vol. i, p. 347, pl. xvi, fig. 11 (cut, p. 344).
- Hirundo unalaschkenensis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 320.
- Histrionicus torquatus*.  
(78) P. R. R. Surv., vol. ix, p. 799.
- Hydrobata mexicana*.  
(78) P. R. R. Surv., vol. ix, p. 228.
- Hydrochelidon plumbea*.  
(78) P. R. R. Surv., vol. ix, p. 804.
- Hyemalis*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 138.
- Hyemalis pacificus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 138.
- Hylematorus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 94.
- Hylocichla*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 12; *Ibid.*, p. 13.
- Hylophilus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 324. *Ibid.*, p. 372.
- Hylophilus acuticauda*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 378.
- Hylophilus aurantiifrons*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 377.
- Hylophilus cineraceus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 375.
- Hylophilus decurtatus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 380.
- Hylophilus ferruginifrons*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 377.
- Hylophilus flaveolus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 375.
- Hylophilus flavipes*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 375.
- Hylophilus frontalis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 375.
- Hylophilus insularis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 379.
- Hylophilus ochraceiceps*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 376.
- Hylophilus olivaceus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 375.
- Hylophilus pecilotis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 375.
- Hylophilus pusillus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 381.
- Hylophilus semibrunneus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 372.
- Hylophilus thoracicus*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 375.



*Euphonia viridiflavus*.

(115) Review of N. A. Birds, May, 1866, Part I, p. 380.

*Eylotomus*.

(632½) Birds of N. A., 1874, vol. ii, p. 548.

*EYLOTOMUS PILEATUS*.

(78) P. R. R. Surv., vol. ix, p. 107; (632½) Birds of N. A., 1874, vol. ii, p. 559, pl. lvi, figg. 4, 5 (cuts, pp. 549, 550).

*Eyocolinus ampelinus*.

(82) Stansbury's Surv. Salt Lake [App. C], p. 328.

*Hypotriorchis aurantius*.

(78) P. R. R. Surv., vol. ix, p. 10.

*Hypotriorchis columbarius*.

(78) P. R. R. Surv., vol. ix, p. 9.

*HYPTIORCHIS FEMORALIS*.

(78) P. R. R. Surv., vol. ix, p. 11; (104) Birds of N. A., 1860, p. 11, pl. 1.

*Ibis alba*.

(78) P. R. R. Surv., vol. ix, p. 684; (87) Mex. Bound. Surv., vol. ii, p. 24.

*Ibis GUARAUNA*.

(104) Birds of N. A., 1860, p. 661, pl. lxxxvii.

*Ibis Ordii*.

(78) P. R. R. Surv., vol. ix, p. 685; (87) Mex. Bound. Surv., vol. ii, p. 24.

*Ibis rubra*.

(78) P. R. R. Surv., vol. ix, p. 683.

*Icteria*.

(115) Review of N. A. Birds, Apr., 1865, Part I, p. 228; (632½) Birds of N. A., 1874, vol. i, p. 306.

*Icteria*.

(115) Review of N. A. Birds, Aug. 1864, Part I, p. 166.

*Icteria*.

(632½) Birds of N. A., 1874, vol. ii, p. 179.

*Icteria longicauda*.

(78) P. R. R. Surv., vol. ix, p. 294; (87) Mex. Bound. Surv., vol. ii, p. 10.

*ICTERIA LONGICAUDA*.

(104) Birds of N. A., 1860, p. 249, pl. xxxiv, fig. 2; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 230.

*Icteria Velasquezii*.

(82) Stansbury's Surv. Salt Lake [App. C], p. 328.

*ICTERIA VIRENS*.

(115) Review of N. A. Birds, Apr., 1865, Part I, p. 228; (632½) Birds of N. A., 1874, vol. i, p. 307, pl. xv, fig. 12 (cuts, pp. 306, 307).

*Icteria virens longicauda*.

(632½) Birds of N. A., 1874, vol. i, p. 309.

*Icteria viridia*.

(78) P. R. R. Surv., vol. ix, p. 179.

*Icteria*.(115) Review of N. A. Birds, Aug., 1864, Part I, p. 166; *Ibid.*, Apr., 1865, Part I, p. 228; (632½) Birds of N. A., 1874, vol. i, p. 306.*Icteria*.

(632½) Birds of N. A., 1874, vol. ii, p. 147.

*Icteria*.

(632½) Birds of N. A., 1874, vol. ii, p. 179.

*Ibis Auduboni*.

(78) P. R. R. Surv., vol. ix, p. 542; (87) Mex. Bound. Surv., vol. ii, p. 19.

*ICTERUS BALTIMORE*.(78) P. R. R. Surv., vol. ix, p. 548; (87) Mex. Bound. Surv., vol. ii, p. 19; (632½) Birds of N. A., 1874, vol. ii, p. 196, pl. xxxv, fig. 5; *Ibid.*, App., p. 518.*ICTERUS BULLOCKII*.(78) P. R. R. Surv., vol. ix, p. 549; (87) Mex. Bound. Surv., vol. ii, p. 20; (632½) Birds of N. A., 1874, vol. ii, p. 199, pl. xxxiv, fig. 3 (cuts, p. 180); *Ibid.*, App., p. 518.*ICTERUS CUCULLATUS*.(82) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 546; (87) Mex. Bound. Surv., vol. ii, p. 19; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 305; (632½) Birds of N. A., 1874, vol. ii, p. 193, pl. xxxv, fig. 6; *Ibid.*, App., p. 517.*Icterus frenatus*.

(82) Stansbury's Surv. Salt Lake [App. C], p. 331.

*Icterus melanocephalus*.

(32) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 543.

*ICTERUS MELANOCEPHALUS AUDUBONI*.

(632½) Birds of N. A., 1874, vol. ii, p. 186, pl. xxxv, fig. 1.

*ICTERUS PARISORUM*.

(78) P. R. R. Surv., vol. ix, p. 544; (87) Mex. Bound. Surv., vol. ii, p. 19, pl. xix, fig. 1; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 305; (104) Birds of N. A., 1860, p. 544, pl. lvii, fig. 1; (632½) Birds of N. A., 1874, vol. ii, p. 188, pl. xxxv, fig. 7.

*ICTERUS SPURIUS*.

(78) P. R. R. Surv., vol. ix, p. 547; (87) Mex. Bound. Surv., vol. ii, p. 19; (632½) Birds of N. A., 1874, vol. ii, p. 190, pl. xxxiv, figg. 4, 5, 6.

*Icterus vulgaris*.

(82) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 542; (632½) Birds of N. A., 1874, vol. ii, p. 184.

*ICTERUS WAGLERI*.

(78) P. R. R. Surv., vol. ix, p. 545; (87) Mex. Bound. Surv., vol. ii, p. 19, pl. xix, fig. 2; (104) Birds of N. A., 1860, p. 545, pl. lvii, fig. 2.

*Ictinia*.

(632½) Birds of N. A., 1874, vol. iii, p. 202.

*ICTINIA MISSISSIPPIENSIS*.

(78) P. R. R. Surv., vol. ix, p. 37; (632½) Birds of N. A., 1874, vol. iii, p. 203 (cuts, pp. 202, 205).

*Idiotes*.(115) Review of N. A. Birds, Apr., 1865, Part I, p. 238; *Ibid.*, p. 247 (237).*Inquietus*.

(115) Review of N. A. Birds, Aug., 1864, Part I, p. 138.

*Intermedius*.

(115) Review of N. A. Birds, Aug., 1864, Part I, p. 138.

*Ixoreus naevius*.

(78) P. R. R. Surv., vol. ix, p. 219.

*Junco*.

(632½) Birds of N. A., 1874, vol. i, p. 578; (632½) Birds of N. A., 1874, App., p. 514.

**JUNCO CANICRPS.**

- (78) P. R. R. Surv., vol. ix, p. 468; (104) Birds of N. A., 1860, p. 468, pl. lxxii, fig. 1; (632½) Birds of N. A., 1874, vol. i, p. 587, pl. xxvi, fig. 3.

**Junco cinereus.**

- (78) P. R. R. Surv., vol. ix, p. 465.

**JUNCO DOBSALIS.**

- (78) P. R. R. Surv., vol. ix, p. 466; (104) Birds of N. A., 1860, p. 467, pl. xxviii, fig. 1.

**JUNCO HYEMALIS.**

- (78) P. R. R. Surv., vol. ix, p. 468; (632½) Birds of N. A., 1874, vol. i, p. 580, pl. xxvi, fig. 5.

**JUNCO HYEMALIS AIKENI.**

- (632½) Birds of N. A., 1874, vol. i, p. 584, pl. xxvi, fig. 6; *Ibid.*, App., p. 514.

**JUNCO OREGONUS.**

- (78) P. R. R. Surv., vol. ix, p. 467; (632½) Birds of N. A., 1874, vol. i, p. 584, pl. xxvi, fig. 2 (cuts, pp. 578, 581); *Ibid.*, App., p. 514.

**Lagopus.**

- (632½) Birds of N. A., 1874, vol. iii, p. 456.

**LAGOPUS ALBUS.**

- (78) P. R. R. Surv., vol. ix, p. 633; (632½) Birds of N. A., 1874, vol. iii, p. 457, pl. ix, fig. 8, pl. lxi, figs. 1, 2, 3 (cuts, pp. 457, 458).

**Lagopus americanus.**

- (78) P. R. R. Surv., vol. ix, p. 637.

**LAGOPUS LEUCURUS.**

- (78) P. R. R. Surv., vol. ix, p. 636; (632½) Birds of N. A., 1874, vol. iii, p. 464, pl. lxii, fig. 6.

**LAGOPUS MUTUS RUPESTRIS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 462, pl. lxii, figs. 4, 5.

**Lagopus rupestris.**

- (78) P. R. R. Surv., vol. ix, p. 635.

**Lalates.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 324; *Ibid.*, p. 382.

**Lalates Osburnii.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 383.

**Lampornis mango.**

- (78) P. R. R. Surv., vol. ix, p. 130.

**Lampronetta Fischeri.**

- (78) P. R. R. Surv., vol. ix, p. 803.

**Laniidae.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 322; *Ibid.*, June, 1866, Part I, p. 437; (632½) Birds of N. A., 1874, vol. i, p. 412.

**Lanius elegans.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

**Lanius excubitorides.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

**Lanivireo.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 345; (632½) Birds of N. A., 1874, vol. i, p. 372.

**Lanivireo Cassinii.**

- (78) P. R. R. Surv., vol. ix, p. 340.

**LANIVIREO FLAVIFRONS.**

- (78) P. R. R. Surv., vol. ix, p. 341; (632½) Birds of N. A., 1874, vol. i, p. 379, pl. xvii, fig. 5 (cut, p. 379).

**Lanivireo Huttoni.**

- (78) P. R. R. Surv., vol. ix, p. 339.

**Lanivireo noveboracensis.**

- (78) P. R. R. Surv., vol. ix, p. 338.

**LANIVIREO SOLITARIUS.**

- (78) P. R. R. Surv., vol. ix, p. 340; (632½) of N. A., 1874, vol. i, p. 373, pl. xvi (cut, p. 374); *Ibid.*, App., p. 507.

**LANIVIREO SOLITARIUS CASSINI.**

- (632½) Birds of N. A., 1874, vol. i, p. xvii, fig. 9.

**LANIVIREO SOLITARIUS PLUMBEUS.**

- (632½) Birds of N. A., 1874, vol. i, p. xvii, fig. 10 (cut, p. 377); *Ibid.*, App., p. 507.

**Larus argentatus.**

- (78) P. R. R. Surv., vol. ix, p. 844.

**Larus Belcheri.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 335.

**Larus borealis.**

- (129) Chicago Acad. Sci., 1869, p. 324.

**Larus brachyrhynchus.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 335.

**Larus californicus.**

- (78) P. R. R. Surv., vol. ix, p. 846.

**Larus chalconotus.**

- (78) P. R. R. Surv., vol. ix, p. 843.

**Larus delawarensis.**

- (78) P. R. R. Surv., vol. ix, p. 846; (87) Bound. Surv., vol. ii, p. 27.

**Larus glaucescens.**

- (78) P. R. R. Surv., vol. ix, p. 842.

**Larus glaucus.**

- (78) P. R. R. Surv., vol. ix, p. 842.

**Larus leucopterus.**

- (78) P. R. R. Surv., vol. ix, p. 843.

**Larus marinus.**

- (78) P. R. R. Surv., vol. ix, p. 844.

**Larus occidentalis.**

- (78) P. R. R. Surv., vol. ix, p. 845.

**Larus Suckleyi.**

- (78) P. R. R. Surv., vol. ix, p. 848.

**LATHRIDURUS MAJOR.**

- (87) Mex. Bound. Surv., vol. ii, p. 7, fig. 2.

**Leucoblepharon canadensis.**

- (78) P. R. R. Surv., vol. ix, p. 764.

**Leucoblepharon Hutchinsii.**

- (78) P. R. R. Surv., vol. ix, p. 765.

**Leucoblepharon leucopareia.**

- (78) P. R. R. Surv., vol. ix, p. 765.

**Leucopareia leucopsis.**

- (78) P. R. R. Surv., vol. ix, p. 768.

**Leucopolina nivosa.**

- (78) P. R. R. Surv., vol. ix, p. 695.

**Leucopternis Harlani.**

- (78) P. R. R. Surv., vol. ix, p. 24.

**Leucopternis insignatus.**

- (78) P. R. R. Surv., vol. ix, p. 23.

**Leucosticte.**

- (632½) Birds of N. A., 1874, vol. i, p. 368.

**LEUCOSTICTE ANCTOUS.**

- (78) P. R. R. Surv., vol. ix, p. 430; (104) of N. A., 1860, p. 430, pl. lxxiv, fig. 1.

**LEUCOSTICTE GRISINUCHA.**

- (32) Stansbury's Surv. Salt Lake [App. C] p., 331; (78) P. R. R. Surv., vol. ix, p. 430; (129) Chicago Acad. Sci., 1869, p. 316, pl. xxviii, fig. 2.

**LEUCOSTICTE LITTORALIS.**

- (129) Chicago Acad. Sci., 1869, p. 318, pl. xxviii, fig. 1.

**LEUCOSTICTE TEPHROCOTIS.**

- (31) Stansbury's Surv. Salt Lake [App. C], p. 317; (78) P. R. R. Surv., vol. ix, p. 430; (632½) Birds of N. A., 1874, vol. i, p. 504, pl. xxiii, figg. 8, 9, (cuts pp. 502, 503); *Ibid.*, App., p. 509.

**LEUCOSTICTE TEPHROCOTIS CAMPESTRIS.**

- (632½) Birds of N. A., 1874, vol. i, p. 507, pl. xxiii, fig. 7.

**LEUCOSTICTE TEPHROCOTIS GRISINUCHA.**

- (632½) Birds of N. A., 1874, vol. i, p. 508, pl. xxiii, fig. 5.

**LEUCOSTICTE TEPHROCOTIS LITTORALIS.**

- (632½) Birds of N. A., 1874, vol. i, p. 507, pl. xxiii, fig. 6.

**Limosa fudson.**

- (78) P. R. R. Surv., vol. ix, p. 740.

**Limosa Hudsonica.**

- (78) P. R. R. Surv., vol. ix, p. 741.

**LIMOSA UROPTALIA.**

- (129) Chicago Acad. Sci., 1869, p. 320, pl. xxxii.

**Lophodytes cucullatus.**

- (78) P. R. R. Surv., vol. ix, p. 816.

**Lophophanes.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 77; (632½) Birds of N. A., 1874, vol. i, p. 86.

**LOPHOPHANES ATHICRISTATUS.**

- (78) P. R. R. Surv., vol. xi, p. 385; (32) Stansbury's Surv. Salt Lake [App. C], p. 331; (87) Mex. Bound. Surv., vol. ii, p. 14; (115) Review of N. A. Birds, July, 1864, Part I, p. 78; (632½) Birds of N. A., 1874, vol. i, p. 90, pl. vi, fig. 2.

**LOPHOPHANES BICOLOR.**

- (78) P. R. R. Surv., vol. ix, p. 384; (115) Review of N. A. Birds, July, 1864, Part I, p. 78; (632½) Birds of N. A., 1874, vol. i, p. 87, pl. vi, fig. 1 (cut, p. 87).

**LOPHORTYX CALIFORNICUS.**

- (632½) Birds of N. A., 1874, vol. iii, p. 479, pl. lxi, fig. 4, pl. lxiv, figg. 1, 2 (cuts, pp. 478, 479).

**LOPHORTYX GAMBELI.**

- (632½) Birds of N. A., 1874, vol. iii, p. 482, pl. lxiv, figg. 4, 5.

**LOPHOPHANES INORNATUS.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 386; (115) Review of N. A. Birds, July, 1864, Part I, p. 78; (632½) Birds of N. A. 1874, vol. i, p. 91, pl. vi, fig. 3 (cut, p. 88); *Ibid.*, App., p. 562.

**Lophophanes septentrionalis.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**LOPHOPHANES WOLLWEHNI.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 386; (87) Mex. Bound. Surv., vol. ii, p. 14, pl. xv, fig. 1; (104) Birds of N. A., 1860, p. 336, pl. iii, fig. 1; (115) Review of N. A. Birds, July, 1864, Part I, p. 79; (632½) Birds of N. A., 1874, vol. i, p. 93, pl. vi, fig. 4.

**Lophortyx.**

- (632½) Birds of N. A., 1874, vol. iii, p. 478.

**Lophortyx californicus.**

- (78) P. R. R. Surv., vol. ix, p. 644; (87) Mex. Bound. Surv., vol. ii, p. 22; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 305.

**Lophortyx Gambelii.**

- (78) P. R. R. Surv., vol. ix, p. 645; (87) Mex. Bound. Surv., vol. ii, p. 23; (632½) Birds of N. A., 1874, App., p. 523.

**Loxia.**

- (632½) Birds of N. A., 1874, vol. i, p. 488.

**LOXIA CURVIROSTRA AMERICANA.**

- (632½) Birds of N. A., 1874, vol. i, p. 484, pl. xxiii, figg. 1, 4 (cuts, pp. 483, 484, 485); *Ibid.*, p. 488 (cut, p. 485).

**LOXIA LEUCOPTERA.**

- (632½) Birds of N. A., 1874, vol. i, p. 488, pl. xxiii, figg. 2, 3.

**Loxia leucoptera bifasciata.**

- (632½) Birds of N. A., 1874, App., p. 509.

**Lunda cirrhata.**

- (78) P. R. R. Surv., vol. ix, p. 902.

**Macrorhamphus griseus.**

- (78) P. R. R. Surv., vol. ix, p. 712; (87) Mex. Bound. Surv., vol. ii, p. 25.

**Macrorhamphus scolopaceus.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 334; (78) P. R. R. Surv., vol. ix, p. 712.

**Malacocichla.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 10.

**Mareca americana.**

- (31) Stansbury's Surv. Salt Lake [App. C], p. 322; (78) P. R. R. Surv., vol. ix, p. 783; (87) Mex. Bound. Surv., vol. ii, p. 27.

**MARECA PENELOPE.**

- (78) P. R. R. Surv., vol. ix, p. 784; (104) Birds of N. A., 1860, p. 784, pl. xci, fig. 2.

**Margarops.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 5; *Ibid.*, July, 1864, Part I, p. 41.

**Margarops densirostris.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59.

**Margarops fuscatus.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 42.

**Margarops montanus.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59.

**Megasceryle alcyon.**

- (78) P. R. R. Surv., vol. ix, p. 168.

**Melanerpes.**

- (632½) Birds of N. A., 1874, vol. ii, p. 559.

**Melanerpes albolaryvatus.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 333.

**MELANERPES KETHROCEPHALUS.**

- (78) P. R. R. Surv., vol. ix, p. 113; (6324) Birds of N. A., 1874, vol. ii, p. 564, pl. liv, fig. 4 (cut, p. 560).

**Melanerpes formicivorus.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 333 (78) P. R. R. Surv., vol. ix, p. 114; (87) Mex. Bound. Surv., vol. ii, p. 6.

**MELANERPES FORMICIVORUS ANGUSTIFRONS.**

- (6324) Birds of N. A., 1874, vol. ii, p. 573, pl. liii, figs. 3, 4.

**MELANERPES FORMICIVORUS FORMICIVORUS.**

- (6324) Birds of N. A., 1874, vol. ii, p. 566, pl. liii, figs. 1, 2 (cut, p. 567).

**MELANERPES TORQUATUS.**

- (78) P. R. R. Surv., vol. ix, p. 115; (6324) Birds of N. A., 1874, vol. ii, p. 561, pl. liv, fig. 5.

**Melanetta velutina.**

- (78) P. R. R. Surv., vol. ix, p. 805.

**Melanoptila.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 5; *Ibid.*, July, 1864, Part I, p. 55.

**Melanoptila glabriorostris.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 55.

**Melanotis.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 5; *Ibid.*, July, 1864, Part I, p. 56.

**Melanotis caerulescens.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 56.

**Melanotis hypoleucos.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 57.

**Melanerpes.**

- (6324) Birds of N. A., 1874, vol. iii, p. 402.

**Melanerpes.**

- (6324) Birds of N. A., 1874, vol. iii, p. 403.

**Melanerpes gallopavo.**

- (78) P. R. R. Surv., vol. ix, p. 615.

**MELANERPES GALLOPAVO GALLOPAVO.**

- (6324) Birds of N. A., 1874, vol. iii, p. 404 (cut, pp. 403, 404).

**Melanerpes mexicana.**

- (78) P. R. R. Surv., vol. ix, p. 618.

**Melanerpes.**

- (6324) Birds of N. A., 1874, vol. iii, p. 376.

**MELOSPIZA LEUCOPTERA.**

- (78) P. R. R. Surv. vol. ix, p. 603; (87) Mex. Bound. Surv. vol. ii, p. 21; (90) Pr. Acad. Nat. Sci. Phila., 1859, p. 305; (6324) Birds of N. A., 1874, vol. iii, p. 376, pl. lviii, fig. 9 (cut, pp. 376, 377).

**Melospiza.**

- (6324) Birds of N. A., 1874, vol. ii, p. 16.

**Melospiza (Melospiza) fallax.**

- (78) P. R. R. Surv., vol. ix, p. 481.

**MELOSPIZA FALLAX.**

- (104) Birds of N. A., 1860, p. 481, pl. xxvii, fig. 2.

**Melospiza (Melospiza) Gouldii.**

- (78) P. R. R. Surv., vol. ix, p. 479.

**MELOSPIZA GOULDII.**

- (104) Birds of N. A., 1860, p. 479, pl. lxx, fig. 2.

**Melospiza (Melospiza) Heermannii.**

- (78) P. R. R. Surv., vol. ix, p. 478.

**MELOSPIZA HEERMANNII.**

- (104) Birds of N. A., 1860,

**MELOSPIZA INSIGNIS.**

- (129) Chicago Acad. Sci., fig. 2.

**MELOSPIZA LINCOLNII.**

- (78) P. R. R. Surv., vol. i Bound. Surv., vol. ii, p. N. A., 1874, vol. ii, p. 13; *Ibid.*, App., p. 514

**Melospiza (Melospiza) melodi**

- (78) P. R. R. Surv. vol. ix,

**MELOSPIZA MELODIA.**

- (87) Mex. Bound. Surv., Birds of N. A., 1874, v fig. 6 (cuts, p. 16).

**MELOSPIZA MELODIA FALLAX.**

- (6324) Birds of N. A., 18 xxvii, fig. 10.

**MELOSPIZA MELODIA GUTTATA.**

- (6324) Birds of N. A., 18 xxvii, fig. 12.

**MELOSPIZA MELODIA HEERMANNII.**

- (6324) Birds of N. A., 1874, fig. 9.

**MELOSPIZA MELODIA INSIGNIS.**

- (6324) Birds of N. A., 18 xxvii, fig. 8.

**MELOSPIZA MELODIA RUFINA.**

- (6324) Birds of N. A., 18 xxvii, fig. 11.

**MELOSPIZA MELODIA SAMUEL.**

- (6324) Birds of N. A., 1874, fig. 7.

**MELOSPIZA PALUSTRIS.**

- (78) P. R. R. Surv., vol. ix, of N. A., 1874, vol. ii, p. 1, 2; *Ibid.*, App., p. 5

**Melospiza (Melospiza) rufina.**

- (78) P. R. R. Surv., vol. ix,

**Mergellus albellus.**

- (78) P. R. R. Surv., vol. ix, Mergellus alle.

**Mergellus alle.**

- (78) P. R. R. Surv., vol. ix,

**Mergellus Cassinii.**

- (32) Stansbury's Surv. Sa

325.

**Mergellus cirrocephalus.**

- (32) Stansbury's Surv. Sa

335.

**Mergus americanus.**

- (78) P. R. R. Surv., vol. ix

Surv., vol. ii, p. 27.

**Mergus serrator.**

- (78) P. R. R. Surv., vol. ix

**Merula.**

- (115) Review of N. A. Bi I, p. 12; *Ibid.*, p. 31.

**Merula olivacea.**

- (32) Stansbury's Surv. Sa 328.

**Microthene.**

- (6324) Birds of N. A., 1874

**MICROTHERNE WHITNEYI.**

- (6324) Birds of N. A., 1874, pp. 86, 86).

**Microcerculus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 94; *Ibid.*, p. 112.

**Microcerculus philomela.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 114.

**Micropalama himantopus.**

- (78) P. R. R. Surv., vol. ix, p. 726.

**Milvulus.**

- (632½) Birds of N. A., 1874, vol. ii, p. 308.

**MILVULUS FORFICATUS.**

- (78) P. R. R. Surv., vol. ix, p. 169; (87) Mex. Bound. Surv., vol. ii, p. 7; (632½) Birds of N. A., 1874, vol. ii, p. 311, pl. xliii, fig. 1 (cuts, pp. 308, 311).

**Milvulus tyrannus.**

- (78) P. R. R. Surv., vol. ix, p. 168; (632½) Birds of N. A., 1874, vol. ii, p. 309.

**Mimiae.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 4; *Ibid.*, June, 1864, Part I, p. 5; (632½) Birds of N. A., 1874, vol. i, p. 31.

**Mimocichla.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 4; *Ibid.*, July, 1864, Part I, p. 35.

**Mimocichla ardosiacea.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 30.

**Mimocichla plumbea.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 36.

**Mimocichla rubripes.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 38.

**Mimocichla schistacea.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 37.

**Mimus.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 5; *Ibid.*, July, 1864, Part I, p. 48; (632½) Birds of N. A., 1874, vol. i, p. 48.

**Mimus bahamensis.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 52.

**Mimus carolinensis.**

- (78) P. R. R. Surv., vol. ix, p. 246.

**Mimus dominicus.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 50.

**Mimus gracilis.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 54.

**Mimus Gundlachi.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 50.

**Mimus Huttoni.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 52.

**Mimus leucopterus.**

- (22) Stansbury's Surv. Salt Lake [App. C], p. 228.

**Mimus longirostris.**

- (22) Stansbury's Surv. Salt Lake [App. C], p. 228.

**Mimus melanopterus.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 50.

**Mimus orpheus.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 50.

**MIMUS POLYGLOTTUS.**

- (78) P. R. R. Surv., vol. ix, p. 344; (87) Mex. Bound. Surv., vol. ii, p. 12; (115) Review of N. A. Birds, July, 1864, Part I, p. 48; (632½) Birds of N. A., 1874, vol. i, p. 49, pl. iii, fig. 4 (cuts, pp. 48, 49); *Ibid.*, App., p. 501.

**Mitrephorus.**

- (632½) Birds of N. A., 1874, vol. ii, p. 385 (cut, p. 385).

**MITREPHORUS FULVIFRONS PALLESCENS.**

- (632½) Birds of N. A., 1874, vol. ii, p. 386, pl. xlii, fig. 13.

**Mniotilta.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 167; (632½) Birds of N. A., 1874, vol. i, p. 180.

**MNIOTILTA VARIA.**

- (78) P. R. R. Surv., vol. ix, p. 235; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 167; (632½) Birds of N. A., 1874, vol. i, p. 180, pl. x, fig. 6 (cuts, pp. 180, 181).

**Mniotiltæ.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 166.

**Molothrus.**

- (632½) Birds of N. A., 1874, vol. ii, p. 153.

**MOLOTHRUS FICORUM.**

- (78) P. R. R. Surv., vol. ix, p. 524; (87) Mex. Bound. Surv., vol. ii, p. 18; (632½) Birds of N. A., 1874, vol. ii, p. 154, pl. xxxii, figg. 6, 7 (cuts, p. 153).

**MOMOTUS CÆRULICEPS.**

- (78) P. R. R. Surv., vol. ix, p. 161; (87) Mex. Bound. Surv., vol. ii, p. 7, pl. viii; (104) Birds of N. A., 1860, p. 161, pl. xlii.

**Mormon arctica.**

- (78) P. R. R. Surv., vol. ix, p. 903.

**Mormon cirrhata.**

- (78) P. R. R. Surv., vol. ix, p. 902.

**Mormon corniculata.**

- (78) P. R. R. Surv., vol. ix, p. 902.

**Mormon glacialis.**

- (78) P. R. R. Surv., vol. ix, p. 903.

**Motacilla.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 150; *Ibid.*, p. 151; (632½) Birds of N. A., 1874, vol. i, p. 165.

**MOTACILLA ALBA.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 152; (632½) Birds of N. A., 1874, vol. i, p. 165, pl. x, fig. 1 (cuts, pp. 165, 166).

**Motacilla fulva.**

- (115) Review of N. A. Birds, May, 1865, Part I, p. 266.

**Motacilla leucoptera.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 829.

**Motacillide.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 150; *Ibid.*, p. 164; (632½) Birds of N. A., 1874, vol. i, p. 164.

**Motacillinae.**

(632½) Birds of N. A., 1874, vol. i, p. 165.

**Myiadestes.**(115) Review of N. A. Birds, June, 1866, Part I, p. 417; *Ibid.*, p. 418; (632½) Birds of N. A., 1874, vol. i, p. 408.**Myiadestes ardesiaceous.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 421.

**Myiadestes armillatus.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 422.

**Myiadestes Elisabethi.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 425.

**Myiadestes genibarbis.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 423.

**Myiadestes griseiventer.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 421.

**Myiadestes leucotis.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 422.

**Myiadestes melanopa.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 426.

**Myiadestes obscurus.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 430.

**Myiadestes solitarius.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 421.

**MYIADESTES TOWNSENDII.**

(78) P. R. R. Surv., vol. ix, p. 321; (115) Review of N. A. Birds, June, 1866, Part I, p. 429; (632½) Birds of N. A., 1874, vol. i, p. 409, pl. xviii, figg. 5, 6 (cuts, pp. 408, 410).

**Myiadestes unicolor.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 428.

**Myiadestes venezuelensis.**

(115) Review of N. A. Birds, June, 1866, Part I, p. 427.

**Myiadestinus.**(115) Review of N. A. Birds, May, 1865, Part I, p. 409; *Ibid.*, June, 1866, Part I, p. 417.**Myiarchus.**(632½) Birds of N. A., 1874, vol. ii, p. 329; *Ibid.*, App., p. 519.**Myiarchus Cooperi.**

(78) P. R. R. Surv., vol. ix, p. 180.

**MYIARCHUS CRINITUS.**

(78) P. R. R. Surv., vol. ix, p. 178; (632½) Birds of N. A., 1874, vol. ii, p. 334, pl. xliii, fig. 3.

**MYIARCHUS CRINITUS CINERASCENS.**

(632½) Birds of N. A., 1874, vol. ii, p. 337, pl. xliii, fig. 6 (cut, p. 334).

**Myiarchus Lawrencei.**

(78) P. R. R. Surv., vol. ix, p. 181; (87) Mex. Bound. Surv., vol. ii, p. 8, pl. ix, fig. 3; (104) Birds of N. A., 1860, p. 181, pl. xlvii, fig. 3.

**MYIARCHUS MEXICANUS.**

(78) P. R. R. Surv., vol. ix, p. 179; (87) Mex. Bound. Surv., vol. ii, p. 8; (89) Tr. Acad. Sci. Phila., 1850 (1860), p. 303; (104) Birds of N. A., 1860, p. 179, pl. v.

**Myioborus.**(115) Review of N. A. Birds, Apr., 1865, Part I, p. 238; *Ibid.*, May, 1865, Part I, p. 237 (237).**Myiodytes.**(115) Review of N. A. Birds, Apr., 1865, Part I, p. 236; *Ibid.*, p. 238; (632½) Birds of N. A., 1874, vol. i, p. 312.**Myiodytes Bonapartei.**

(78) P. R. R. Surv., vol. ix, p. 236.

**MYIODYTES CANADENSIS.**

(78) P. R. R. Surv., vol. ix, p. 236; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 237; (632½) Birds of N. A., 1874, vol. i, p. 313, pl. xvi, fig. 6.

**MYIODYTES MINUTUS.**

(78) P. R. R. Surv., vol. ix, p. 233; (115) Review of N. A. Birds, May, 1865, Part I, p. 241; (632½) Birds of N. A., 1874, vol. i, p. 314, pl. xvi, fig. 2.

**MYIODYTES NITRATUS.**

(78) P. R. R. Surv., vol. ix, p. 232; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 237; (632½) Birds of N. A., 1874, vol. i, p. 314, pl. xv, figg. 10, 11 (cut, p. 313).

**MYIODYTES PUSILLUS.**

(6) Lit. Rec. S. Jouth. Linnean Ass. Penn. Col., Oct., 1845, p. 252; (78) P. R. R. Surv., vol. ix, p. 238; (87) Mex. Bound. Surv., vol. ii, p. 10; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 240; (632½) Birds of N. A., 1874, vol. i, p. 317, pl. xvi, figg. 1 &amp; 2 (cut, p. 314).

**Myiodytes pusillus pileolatus.**

(632½) Birds of N. A., 1874, App., p. 507.

**Myiodytes pusillus pileolatus.**

(632½) Birds of N. A., 1874, vol. i, p. 318.

**Myiophlyps.**(115) Review of N. A. Birds, Apr., 1865, Part I, p. 237, 238; *Ibid.*, May, 1865, Part I, p. 231.**Nauclerus.**

(632½) Birds of N. A., 1874, vol. iii, p. 190.

**NAUCLERUS FORFICATUS.**

(632½) Birds of N. A., 1874, vol. iii, p. 193 (cuts, pp. 191, 192).

**Nauclerus furcatus.**

(78) P. R. R. Surv., vol. ix, p. 36.

**Nectris fuliginosa.**

(78) P. R. R. Surv., vol. ix, p. 394.

**Neocheilidon.**

(115) Review of N. A. Birds, May, 1865, Part I, pp. 270, 265, 267.

**Neochloe.**

(115) Review of N. A. Birds, May, 1865, Part I, pp. 323, 371.

**Neochloe brevipennis.**

(115) Review of N. A. Birds, May, 1865, Part I, p. 372.

**Neocorya.**

(115) Review of N. A. Birds, Aug., 1864, Part I, pp. 151, 155; (632½) Birds of N. A., 1874, vol. i, p. 174.

## NEOCOTTE SPRAGUEII.

(78) P. R. R. Surv., vol. ix, p. 234; (632½) Birds of N. A., 1874, vol. i, p. 175, pl. x, fig. 5 (cuts, pp. 175, 176).

## NEPHOCETES.

(632½) Birds of N. A., 1874, vol. ii, p. 428; (78) P. R. R. Surv., vol. ix, p. 142; (632½) Birds of N. A., 1874, vol. ii, p. 429, pl. xlv, fig. 4 (cuts, p. 428); *Ibid.*, App., p. 521.

## Nettion carolinensis.

(78) P. R. R. Surv., vol. ix, p. 777; (87) Mex. Bound. Surv., vol. ii, p. 26; (94) P. R. R. Surv., vol. x, p. 16.

## NIPHOX CIRCICA.

(78) P. R. R. Surv., vol. ix, p. 778; (104) Birds of N. A., 1860, p. 771, pl. xci, fig. 1.

## Niphoca oregana.

(31) Stansbury's Surv. Salt Lake [App. C], p. 316.

## Nissa.

(632½) Birds of N. A., 1874, vol. iii, pp. 220, 222.

## NISUS COOPERI COOPERI.

(632½) Birds of N. A., 1874, vol. iii, p. 230 (cuts, pp. 222, 223, 223).

## Nisus cooperi mexicanus.

(632½) Birds of N. A., 1874, vol. iii, p. 230.

## NISO FUSCUS.

(632½) Birds of N. A., 1874, vol. iii, p. 224 (cuts, pp. 222, 223, 227).

## Notochelidon.

(115) Review of N. A. Birds, May, 1865, Part I, pp. 270, 305, 306.

## Notoctarya.

(115) Review of N. A. Birds, Aug., 1864, Part I, pp. 151, 156.

## Numenius borealis.

(78) P. R. R. Surv., vol. ix, p. 744.

## Numenius hudsonicus.

(78) P. R. R. Surv., vol. ix, p. 744.

## Numenius longirostris.

(31) Stansbury's Surv. Salt Lake [App. C], p. 320.

## Numenius (Numenius) longirostris.

(78) P. R. R. Surv., vol. ix, p. 743.

## Numenius longirostris.

(97) Mex. Bound. Surv., vol. ii, p. 25; (94) P. R. R. Surv., vol. x, p. 15.

## Numenius rufiventris.

(32) Stansbury's Surv. Salt Lake [App. C], p. 334.

## Nyctale.

(632½) Birds of N. A., 1874, vol. iii, p. 39.

## NYCTALE ACADICA.

(78) P. R. R. Surv., vol. ix, p. 58; (632½) Birds of N. A., 1874, vol. iii, p. 43 (cuts, pp. 39, 44).

## Nyctale albifrons.

(78) P. R. R. Surv., vol. ix, p. 57.

## Nyctale richardsoni.

(78) P. R. R. Surv., vol. ix, p. 57.

## NYCTALE TENOMALMI RICHARDSONI.

(632½) Birds of N. A., 1874, vol. iii, p. 40 (cuts, pp. 40, 97, 98, 99, 100, 101.)

## Nyctalus nives.

(78) P. R. R. Surv., vol. ix, p. 63.

## NYCTEA SCANDIACA ARCTICA.

(632½) Birds of N. A., 1874, vol. iii, p. 71 (cut, p. 71).

## Nythterodius violaceus.

(78) P. R. R. Surv., vol. ix, p. 679; (87) Mex. Bound. Surv., vol. ii, p. 24.

## Nyctiardea gardeni.

(78) P. R. R. Surv., vol. ix, p. 678; (87) Mex. Bound. Surv., vol. ii, p. 24.

## Nyctioeorax discors.

(6) Lit. Rec. and Journ. Linnæan Assoc. Penn. Col., Oct., 1845, p. 255.

## Oceanites wilsoni.

(78) P. R. R. Surv., vol. ix, p. 831.

## Oceanodroma furcata.

(78) P. R. R. Surv., vol. ix, p. 829.

## Oceanodroma hornbyi.

(78) P. R. R. Surv., vol. ix, p. 829.

## Ochthodromus wilsonius.

(78) P. R. R. Surv., vol. ix, p. 693.

## Oldemia americana.

(78) P. R. R. Surv., vol. ix, p. 807.

## Oldemia bimaculata.

(78) P. R. R. Surv., vol. ix, p. 808.

## Oldemia velvetina.

(32) Stansbury's Surv. Salt Lake [App. C], p. 335.

## Ombria psittacula.

(78) P. R. R. Surv., vol. ix, p. 910.

## Onocrotalus fuscus.

(78) P. R. R. Surv., vol. ix, p. 870.

## Onychotes.

(632½) Birds of N. A., 1874, vol. iii, p. 252.

## ONYCHOTES GRUBERI.

(632½) Birds of N. A., 1874, vol. iii, p. 254 (cuts, pp. 252, 254).

## Oporornis.

(115) Review of N. A. Birds, Apr., 1865, Part I, pp. 217, 218; (632½) Birds of N. A., 1874, vol. i, p. 290.

## OPORORNIS AGILIS.

(78) P. R. R. Surv., vol. ix, p. 246; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 218; (104) Birds of N. A., 1860, p. 246, pl. lxxi, fig. 2; (632½) Birds of N. A., 1874, vol. i, p. 290, pl. xv, figg. 1, 2 (cut, p. 291).

## OPORORNIS FORMOSUS.

(78) P. R. R. Surv., vol. ix, p. 247; (115) Review of N. A. Birds, Apr., 1865, Part I, p. 218; (632½) Birds of N. A., 1874, vol. i, p. 293, pl. xv, fig. 3 (cut, p. 290).

## Oreopeleia.

(632½) Birds of N. A., 1874, vol. iii, p. 392.

## ORROPELEIA MARTINICA.

(78) P. R. R. Surv., vol. ix, p. 607; (632½) Birds of N. A., 1874, vol. iii, p. 493, pl. lviii, fig. 1, cuts, 393, 394.)

## Oreortyx.

(632½) Birds of N. A., 1874, vol. iii, p. 475.

## OREORTYX PICTUS.

(78) P. R. R. Surv., vol. ix, p. 642; (632½) Birds of N. A., 1874, vol. iii, p. 475, pl. lxiii, fig. 5 (cut, p. 477); *Ibid.*, App., p. 523.

## Oreoscoptes.

(115) Review of N. A. Birds, June, 1864, Part I, p. 5; *Ibid.*, July, 1864, Part I, p. 42; (632½) Birds of N. A., 1874, vol. i, p. 81.

**ORZOCOPTES MONTANUS.**

- (78) P. R. R. Surv., vol. ix, p. 347; (87) Mex. Bound. Surv., vol. ii, p. 12; (115) Review of N. A. Birds, July, 1894, Part I, p. 43; (6324) Birds of N. A., 1874, vol. i, p. 32, pl. iii, fig. 6 (cuts, pp. 31, 32).

**Ornismya Costae.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 326.

**Ortalia.**

- (6324) Birds of N. A., 1874, vol. iii, p. 308.

**Ortalia McCalli.**

- (78) P. R. R. Surv., vol. ix, p. 611; (87) Mex. Bound. Surv., vol. ii, p. 22.

**Ortalia vetula.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 324.

**ORTALIDA VETULA MACCALLI.**

- (6324) Birds of N. A., 1874, vol. iii, p. 308, pl. lvii, fig. 1 (cuts, 308, 309).

**Ortyginea.**

- (6324) Birds of N. A., 1874, vol. iii, p. 468.

**Ortyx.**

- (6324) Birds of N. A., 1874, vol. iii, p. 467.

**Ortyx virginianus.**

- (78) P. R. R. Surv., vol. ix, p. 640; (87) Mex. Bound. Surv., vol. ii, p. 22.

**Ortyx virginianus floridanus.**

- (6324) Birds of N. A., 1874, App., p. 522.

**Ortyx virginianus texanus.**

- (6324) Birds of N. A., 1874, vol. iii, p. 468.

**ORTYX VIRGINIANUS VIRGINIANUS.**

- (6324) Birds of N. A., 1874, vol. iii, p. 468, pl. lxiii, figg. 1, 2 (cuts, pp. 467, 468).

**ORTYX TEXANUS.**

- (78) P. R. R. Surv., vol. ix, p. 641; (104) Birds of N. A., 1890, p. 472, pl. lxii; (87) Mex. Bound. Surv., vol. ii, p. 22, pl. xxiv.

**Ossifraga gigantea.**

- (78) P. R. R. Surv., vol. ix, p. 826.

**Otocoris occidentalis.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 331; (31) Stansbury's Surv. Salt Lake [App. C], p. 318.

**Otus.**

- (6324) Birds of N. A., 1874, vol. iii, p. 17.

**OTUS (BRACHYOTUS) BRACHYOTUS.**

- (6324) Birds of N. A., 1874, vol. iii, p. 22 (cuts, pp. 23, 24).

**OTUS VULGARIS WILSONIANUS.**

- (6234) Birds of N. A., 1874, vol. iii, p. 18 (cuts, pp. 19, 20, 69, 98, 99, 100, 101).

**Otus Wilsonianus.**

- (78) P. R. R. Surv., vol. ix, p. 53; (94) P. R. R. Surv., vol. x, p. 12.

**Oxyechus montanus.**

- (78) P. R. R. Surv., vol. ix, p. 693.

**Oxyechus vociferus.**

- (78) P. R. R. Surv., vol. ix, p. 692.

**PACHYRHAMPHUS AGLALE.**

- (78) P. R. R. Surv., vol. ix, p. 164; (87) Mex. Bound. Surv., vol. ii, p. 7, pl. ix, fig. 1; (104) Birds of N. A., 1890, p. 164, pl. xlvii, fig. 1 male.

**Pagophila brachytarsi.**

- (78) P. R. R. Surv., vol. ix, p. 856.

**Pagophila eburnea.**

- (78) P. R. R. Surv., vol. ix, p. 858.

**Pandion.**

- (6324) Birds of N. A., 1874, vol. iii, p. 182.

**Pandion carolinensis.**

- (78) P. R. R. Surv., vol. ix, p. 44; (87) Mex. Bound. Surv., vol. ii, p. 4.

**PANDION HALLESTUS CAROLINENSIS.**

- (6324) Birds of N. A., 1874, vol. iii, p. 184 (cuts, pp. 185, 187).

**Panypptila.**

- (6324) Birds of N. A., 1874, vol. ii, p. 423.

**PANTPTILA MELANOLEUCA.**

- (78) P. R. R. Surv., vol. ix, p. 141; (104) Birds of N. A., 1890, p. 141, pl. xviii, fig. 1; (6324) Birds of N. A., 1874, vol. ii, p. 424, pl. x, fig. 5 (cuts, pp. 422, 423, 426); 1894, App., p. 531.

**Paridae.**

- (115) Review of N. A. Birds, July, 1894, Part I, p. 77; *Ibid.*, Aug., 1894, Part I, p. 16; (6324) Birds of N. A., 1874, vol. i, p. 84.

**Parinae.**

- (115) Review of N. A. Birds, July, 1894, Part I, p. 77; (6324) Birds of N. A., 1874, vol. i, p. 83.

**PAROIDES FLAVICEPS.**

- (78) P. R. R. Surv., vol. ix, p. 466; (87) Mex. Bound. Surv., vol. ii, p. 14, pl. xv, fig. 1; (99) Pr. Acad. Nat. Sci. Phila., 1893, p. 94; (104) Birds of N. A., 1890, p. 466, pl. ix, fig. 2.

**Parula.**

- (115) Review of N. A. Birds, Aug., 1894, Part I, p. 167; *Ibid.*, Nov., 1894, Part I, p. 18; (6324) Birds of N. A., 1874, vol. i, p. 27.

**PARULA AMERICANA.**

- (78) P. R. R. Surv., vol. ix, p. 228; (115) Review of N. A. Birds, Aug., 1894, Part I, p. 169; (6324) Birds of N. A., 1874, vol. i, p. 28, pl. x, fig. 7 (cuts, pp. 208, 209); *Ibid.*, App., p. 504.

**Parula gutturalis.**

- (115) Review of N. A. Birds, Aug., 1894, Part I, p. 169; *Ibid.*, p. 172.

**Parula inornata.**

- (115) Review of N. A. Birds, Aug., 1894, Part I, p. 169; *Ibid.*, p. 171.

**Parula pitiauyumi.**

- (115) Review of N. A. Birds, Aug., 1894, Part I, p. 170, 206; *Ibid.*, p. 169.

**Parula superciliosa.**

- (115) Review of N. A. Birds, Aug., 1894, Part I, p. 169; *Ibid.*, p. 171.

**Parus.**

- (115) Review of N. A. Birds, July, 1894, Part I, p. 79; (6324) Birds of N. A., 1874, vol. i, p. 93.

**PARUS ATRICAPILLUS.**

- (78) P. R. R. Surv., vol. ix, p. 390; (115) Review of N. A. Birds, July, 1894, Part I, p. 80; (6324) Birds of N. A., 1874, vol. i, p. 94, pl. vii, fig. 1 (cut, p. 85).

**PARUS ATRICAPILLUS OCCIDENTALIS.**

- (6324) Birds of N. A. 1874, vol. i, p. 102, pl. vii, fig. 3.



- ARUS ATRICAPILLUS SEPTENTRIONALIS.**  
(632½) Birds of N. A., 1874, vol. i, p. 99, pl. vii, fig. 2.
- ARUS CAROLINENSIS.**  
(78) P. R. R. Surv., vol. ix, p. 392; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 81; (632½) Birds of N. A., 1874, vol. i, p. 102, pl. vii, fig. 4.
- ARUS HUDSONICUS.**  
(78) P. R. R. Surv., vol. ix, p. 395; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 82; (632½) Birds of N. A., 1874, vol. i, p. 105, pl. vii, fig. 7.
- PARUS MERIDIONALIS.**  
(78) P. R. R. Surv., vol. ix, p. 392; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 81.
- PARUS MONTANUS.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 394; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 82; (632½) Birds of N. A., 1874, vol. i, p. 85, pl. vii, fig. 5 (cut, p. 96).
- PARUS OCCIDENTALIS.**  
(78) P. R. R. Surv., vol. ix, p. 391; (115) Review of N. A. Birds, 1864, Part I, p. 81.
- PARUS RUFESCENS.**  
(78) P. R. R. Surv., vol. ix, p. 394; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 83; (632½) Birds of N. A., 1874, vol. i, p. 104, pl. vii, fig. 6; *Ibid.*, App., p. 502.
- PARUS SEPTENTRIONALIS.**  
(31) Stansbury's Surv. Salt Lake [App. C], p. 316; (78) P. R. R. Surv., vol. ix, p. 389; (115) Review of N. A. Birds, July, 1864, Part I, p. 78.
- PASERULUS.**  
(632½) Birds of N. A., 1874, vol. i, p. 532.
- PASERULUS ALAUDINUS.**  
(78) P. R. R. Surv., vol. ix, p. 446; (87) Mex. Bound. Surv., vol. ii, p. 15; (104) Birds of N. A., 1860, p. 446, pl. iv, fig. 1; (632½) Birds of N. A., 1874, App., p. 512; (78) P. R. R. Surv., vol. ix, p. 445.
- PASERULUS PRINCEPS.**  
(632½) Birds of N. A., 1874, vol. i, p. 540, pl. xxv, fig. 2; (632½) Birds of N. A., 1874, App., p. 513.
- PASERULUS ROSTRATUS.**  
(78) P. R. R. Surv., vol. ix, p. 446; (632½) Birds of N. A., 1874, vol. i, p. 542, pl. xxiv, fig. 12.
- PASERULUS ROSTRATUS GUTTATUS.**  
(632½) Birds of N. A., 1874, vol. i, p. 544, pl. xxv, fig. 1.
- PASERULUS SANDWICHENSIS.**  
(78) P. R. R. Surv., vol. ix, p. 444; (104) Birds of N. A., 1860, p. 444, pl. xxviii, fig. 2.
- PASERULUS SAVANNA.**  
(78) P. R. R. Surv., vol. ix, p. 442; (632½) Birds of N. A., 1874, vol. i, p. 534, pl. xxiv, fig. 8 (cuts, pp. 532, 534).
- PASERULUS SAVANNA ALAUDINUS.**  
(632½) Birds of N. A., 1874, vol. i, p. 537, pl. xxiv, fig. 11.
- PASERULUS SAVANNA ANTHINUS.**  
(632½) Birds of N. A., 1874, vol. i, p. 539, pl. xxiv, fig. 10.
- PASERULUS SAVANNA SANDWICHENSIS.**  
(632½) Birds of N. A., 1874, vol. i, p. 538, pl. xxiv, fig. 9.
- PASERELLA.**  
(632½) Birds of N. A., 1874, vol. ii, p. 49; *Ibid.*, App., p. 516.
- PASERELLA ILIACA.**  
(78) P. R. R. Surv., vol. ix, p. 488; (632½) Birds of N. A., 1874, vol. ii, p. 50, pl. xxviii, fig. 7.
- PASERELLA MEGARHYNCHUS.**  
(632½) Birds of N. A., 1874, App., p. 516.
- PASERELLA RUFINA.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 331.
- PASERELLA SCHISTACEA.**  
(78) P. R. R. Surv., vol. ix, p. 490, 925; (104) Birds of N. A., 1860, p. 490, pl. lxix, fig. 3.
- PASERELLA TOWNSENDII.**  
(78) P. R. R. Surv., vol. ix, p. 489; (632½) Birds of N. A., 1874, vol. ii, p. 53, pl. xxviii, fig. 8 (cuts, pp. 50, 54).
- PASERELLA TOWNSENDI MEGARHYNCHUS.**  
(632½) Birds of N. A., 1874, vol. ii, p. 57, pl. xxviii, fig. 10 (cut, p. 57).
- PASERELLA TOWNSENDI SCHISTACEA.**  
(632½) Birds of N. A., 1874, vol. ii, p. 56 (cut, p. 56).
- PASERELLA UNALASCHENSIS.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 331.
- PASERELLINA.**  
(632½) Birds of N. A., 1874, vol. ii, p. 48.
- PATAGIENAS LEUCOCEPHALA.**  
(78) P. R. R. Surv., vol. ix, p. 599.
- PEDICOCORYS.**  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 151; *Ibid.*, p. 157.
- PEDICOCETES.**  
(632½) Birds of N. A., 1874, vol. iii, p. 433.
- PEDICOCETES PHASIANELLUS.**  
(78) P. R. R. Surv., vol. ix, p. 626.
- PEDICOCETES PHASIANELLUS COLUMBIANUS.**  
(632½) Birds of N. A., 1874, vol. iii, p. 436, pl. ix, fig. 1.
- PEDICOCETES PHASIANELLUS PHASIANELLUS.**  
(632½) Birds of N. A., 1874, vol. iii, p. 434, pl. ix, fig. 3 (cuts, pp. 433, 444).
- PELAGICA VAUXII.**  
(632½) Birds of N. A., 1874, vol. ii, p. 435, pl. xiv, fig. 8.
- PELECANUS ERYTHORHYNCHUS.**  
(78) P. R. R. Surv., vol. ix, p. 868; (87) Mex. Bound. Surv., vol. ii, p. 28.
- PELECANUS FUSCUS.**  
(78) P. R. R. Surv., vol. ix, p. 870.
- PELECANUS TRACHYRRHYNCHUS.**  
(31) Stansbury's Surv. Salt Lake [App. C], p. 324.
- PELLONETTA BIMACULATA.**  
(78) P. R. R. Surv., vol. ix, p. 808.
- PELLONETTA PERSPICILLATA.**  
(78) P. R. R. Surv., vol. ix, p. 806.
- PELLONETTA TROWBRIDGII.**  
(78) P. R. R. Surv., vol. ix, p. 806.

- Penca Lincolnii*.  
(81) *Stansbury's Surv. Salt Lake* [App. C], p. 317.
- Pendulinus californianus*.  
(82) *Stansbury's Surv. Salt Lake* [App. C], p. 331.
- Penelope poliocephala*.  
(32) *Stansbury's Surv. Salt Lake* [App. C], p. 334.
- Penelopina*.  
(632½) *Birds of N. A.*, 1874, vol. iii, p. 397.
- Perdix*.  
(632½) *Birds of N. A.*, 1874, vol. iii, p. 466.
- Perisoreus*.  
(632½) *Birds of N. A.*, 1874, vol. ii, p. 297.
- Perisoreus canadensis*.  
(78) *P. R. R. Surv.*, vol. ix, p. 590; (94) *P. R. R. Surv.*, vol. x, p. 14.
- PERISOREUS CANADENSIS*.  
(632½) *Birds of N. A.*, 1874, vol. ii, p. 299, pl. xli, fig. 3; pl. xlii, fig. 4 (cuts, pp. 298, 299).
- PERISOREUS CANADENSIS CAPITALIS*.  
(632½) *Birds of N. A.*, 1874, vol. ii, p. 302, pl. xli, fig. 4.
- Perisoreus canadensis obscurus*.  
(632½) *Birds of N. A.*, 1874, vol. ii, p. 302.
- Perissoglossa*.  
(115) *Review of N. A. Birds*, Apr., 1865, Part I, p. 180; *Ibid.*, p. 182; (632½) *Birds of N. A.*, 1874, vol. i, p. 211.
- PERISOGLOSSA CARIONATA*.  
(632½) *Birds of N. A.*, 1874, vol. i, p. 214, pl. xii, fig. 3.
- PERISOGLOSSA TIGRINA*.  
(115) *Review of N. A. Birds*, Apr., 1865, Part I, p. 163, fig. 5; *Ibid.*, p. 182; (632½) *Birds of N. A.*, 1874, vol. i, p. 212, pl. xii, figs. 1, 2 (cut, p. 211).
- Petrochelidon*.  
(115) *Review of N. A. Birds*, May, 1865, Part I, pp. 270, 271, 286, 289; (632½) *Birds of N. A.*, 1874, vol. i, p. 334.
- Petrochelidon fulva*.  
(115) *Review of N. A. Birds*, May, 1865, Part I, p. 291.
- PETROCHELIDON LUNIFRONS*.  
(115) *Review of N. A. Birds*, May, 1865, Part I, p. 288; (632½) *Birds of N. A.*, 1874, vol. i, p. 334, pl. xvi, fig. 13 (cut, p. 334).
- Petrochelidon pacifica*.  
(115) *Review of N. A. Birds*, May, 1865, Part I, p. 292.
- Petrochelidon ruficollaris*.  
(115) *Review of N. A. Birds*, May, 1865, Part I, p. 292.
- Petrochelidon swainsoni*.  
(115) *Review of N. A. Birds*, May, 1865, Part I, p. 290.
- Peucea*.  
(632½) *Birds of N. A.*, 1874, vol. ii, p. 37.
- PEUCEA ESTIVALIS*.  
(78) *P. R. R. Surv.*, vol. ix, p. 464; (632½) *Birds of N. A.*, 1874, vol. ii, p. 38, pl. xxviii, fig. 4 (cuts, pp. 37, 39).
- Peucea estivalis arizonae*.  
(632½) *Birds of N. A.*, 1874, vol. ii, p. 41; *Ibid.*, App., p. 313.
- Peucea carpella*.  
(632½) *Birds of N. A.*, 1874, App., p. 515.
- PEUCEA CASSINI*.  
(78) *P. R. R. Surv.*, vol. ix, p. 466; (87) *Mex. Bound. Surv.*, vol. ii, p. 16; (104) *Birds of N. A.*, 1880, p. 485, pl. iv, fig. 2; (632½) *Birds of N. A.*, 1874, vol. ii, p. 43, pl. xxviii, fig. 5.
- PEUCEA RUFICRIS*.  
(78) *P. R. R. Surv.*, vol. ix, p. 466; (632½) *Birds of N. A.*, 1874, vol. ii, p. 42, pl. xxviii, fig. 6.
- Phainopepla*.  
(632½) *Birds of N. A.*, 1874, vol. i, p. 465; (115) *Review of N. A. Birds*, May, 1865, Part I, p. 415.
- PHAINOPEPLA NITENS*.  
(115) *Review of N. A. Birds*, May, 1865, Part I, p. 416; (632½) *Birds of N. A.*, 1874, vol. i, p. 405, pl. xviii, figs. 3, 4 (cuts, p. 406); *Ibid.*, App., p. 507.
- Phaeoprogne*.  
(115) *Review of N. A. Birds*, May, 1865, Part I, pp. 269, 282, 283.
- Phaeopus borealis*.  
(78) *P. R. R. Surv.*, vol. ix, p. 744.
- Phaeopus hudsonicus*.  
(78) *P. R. R. Surv.*, vol. ix, p. 744.
- Phaeon flavirostris*.  
(78) *P. R. R. Surv.*, vol. ix, p. 673.
- PHAINOPEPLA NITENS*.  
(78) *P. R. R. Surv.*, vol. ix, pp. 320, 323; (87) *Mex. Bound. Surv.*, vol. ii, p. 11; (99) *Pr. Acad. Nat. Sci. Phila.*, 1859 (1860), p. 303.
- Phalacrocorax carbo*.  
(78) *P. R. R. Surv.*, vol. ix, p. 876.
- Phalacrocorax cinnamomeus*.  
(78) *P. R. R. Surv.*, vol. ix, p. 877.
- Phalacrocorax dilophus*.  
(31) *Stansbury's Surv. Salt Lake* [App. C], p. 324.
- Phalacrocorax penicillatus*.  
(32) *Stansbury's Surv. Salt Lake* [App. C], p. 335.
- Phalacrocorax perspicillatus*.  
(32) *Stansbury's Surv. Salt Lake* [App. C], p. 335; (78) *P. R. R. Surv.*, vol. ix, p. 877.
- Phalaropus fulicarius*.  
(78) *P. R. R. Surv.*, vol. ix, p. 797.
- Phalaropus hyperboreus*.  
(78) *P. R. R. Surv.*, vol. ix, p. 798.
- Phalaropus Wilsonii*.  
(78) *P. R. R. Surv.*, vol. ix, p. 795.
- Phalaris campestris*.  
(78) *P. R. R. Surv.*, vol. ix, p. 808.
- Phalaris cristatellus*.  
(78) *P. R. R. Surv.*, vol. ix, p. 808.
- Phalaris microcerus*.  
(78) *P. R. R. Surv.*, vol. ix, p. 808.
- Phalaris pusillus*.  
(78) *P. R. R. Surv.*, vol. ix, p. 808.
- Phalaris tetralix*.  
(78) *P. R. R. Surv.*, vol. ix, p. 807.
- Phaeoprogne*.  
(115) *Review of N. A. Birds*, Aug., 1865, Part I, p. 96; *Ibid.*, p. 124.

- Phlegopedius fasciato-ventris.**  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 134.
- Phlegopedius felix.**  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 136.
- Phlegopedius maculipectus.**  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 135.
- Phlegopedius rutinus.**  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 135.
- Philobela minor.**  
(78) P. R. R. Surv., vol. ix, p. 700.
- Phileomachus pugnax.**  
(78) P. R. R. Surv., vol. ix, p. 737.
- Phenastria brachyura.**  
(78) P. R. R. Surv., vol. ix, p. 822.
- Phenastria fuliginosa.**  
(78) P. R. R. Surv., vol. ix, p. 823.
- Phenicopterus.**  
(115) Review of N. A. Birds, May, 1866, Part I, p. 402.
- Phenicopterus ruber.**  
(78) P. R. R. Surv., vol. ix, p. 687.
- Phonipara.**  
(632½) Birds of N. A., 1874, vol. ii, p. 92.
- PHONIPARA ZENA.**  
(632½) Birds of N. A., 1874, vol. ii, p. 93, pl. xxix, figg. 15, 16 (cut, p. 92).
- Phrenopicus borealis.**  
(78) P. R. R. Surv., vol. ix, p. 96.
- Phyllopesus.**  
(632½) Birds of N. A., 1874, vol. i, p. 70.
- PHYLLOPESUS BOREALIS.**  
(632½) Birds of N. A., 1874, vol. i, p. 70, pl. v, fig. 5 (cuts, p. 70).
- PHYLLOPESUS KENNICOTTI.**  
(129) Chicago Acad. Sci., 1869, p. 312, pl. xxx, fig. 2.
- Playa cayanaensis.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 323.
- Pica.**  
(632½) Birds of N. A., 1874, vol. ii, p. 264.
- Pica Beecheyi.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 333.
- PICA CAUDATA HUDSONICA.**  
(632½) Birds of N. A., 1874, vol. ii, p. 266, pl. xxxviii, fig. 1 (cut, p. 265).
- PICA CAUDATA NUTTALLI.**  
(632½) Birds of N. A., 1874, vol. ii, p. 270, pl. xxxviii, fig. 3 (cut, p. 266).
- PICA HUDSONICA.**  
(78) P. R. R. Surv., vol. ix, p. 576; (94) P. R. R. Surv., vol. x, p. 14; (104) Birds of N. A., 1860, p. 576, pl. xxv.
- PICA NUTTALLI.**  
(78) P. R. R. Surv., vol. ix, p. 578; (104) Birds of N. A., 1860, p. 578, pl. xxvi.
- Picocorvus.**  
(632½) Birds of N. A., 1874, vol. ii, p. 254.
- PICOCORVUS COLUMBIANUS.**  
(78) P. R. R. Surv., vol. ix, p. 573; (632½) Birds of N. A., 1874, vol. ii, p. 255, pl. xxxvii, fig. 4 (cut, pp. 254, 255).
- Picoides.**  
(632½) Birds of N. A., 1874, vol. ii, p. 491.
- Picinae.**  
(632½) Birds of N. A., 1874, vol. ii, p. 492.
- Picoidea.**  
(632½) Birds of N. A., 1874, vol. ii, p. 528.
- PICOIDES ARCTICUS.**  
(78) P. R. R. Surv., vol. ix, p. 98; (632½) Birds of N. A., 1874, vol. ii, p. 530, pl. i, fig. 1 (cuts, pp. 528, 530).
- PICOIDES DORSALIS.**  
(78) P. R. R. Surv., vol. ix, p. 100; (104) Birds of N. A., 1860, p. 100, pl. lxxxv, fig. 1.
- Picoides hirsutus.**  
(78) P. R. R. Surv., vol. ix, p. 98.
- PICOIDES TRIDACTYLUS AMERICANUS.**  
(632½) Birds of N. A., 1874, vol. ii, p. 532, pl. i, fig. 2.
- Picolaptes brunneicapillus.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 327.
- Picus.**  
(632½) Birds of N. A., 1874, vol. ii, p. 560.
- PICUS ALBOLARVATUS.**  
(78) P. R. R. Surv., vol. ix, p. 96; (632½) Birds of N. A., 1874, vol. ii, p. 526, pl. i, figg. 7, 8 (cut, p. 526).
- PICUS BOREALIS.**  
(78) P. R. R. Surv., vol. ix, p. 96; (632½) Birds of N. A., 1874, vol. ii, p. 525, pl. xlix, fig. 8.
- PICUS GAIRDNERI.**  
(78) P. R. R. Surv., vol. ix, p. 91; (104) Birds of N. A., 1860, p. 91, pl. lxxxv, figg. 2, 3, male and female.
- Picus Gairdneri.**  
(632½) Birds of N. A., 1874, App., p. 521.
- Picus Harrisii.**  
(78) P. R. R. Surv., vol. ix, p. 87; (87) Mex. Bound. Surv., vol. ii, p. 5.
- Picus Lecontei.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 333.
- Picus lucasianus.**  
(99) Pr. Acad. Nat. Sci. Phila., 1859 (1860), p. 302.
- Picus Nuttalli.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 333.
- PICUS NUTTALLI.**  
(78) P. R. R. Surv., vol. ix, p. 93; (104) Birds of N. A., 1860, p. 93, pl. xli, fig. 2; (632½) Birds of N. A., 1874, vol. ii, p. 521, pl. i, figg. 3, 6 (cut, p. 518).
- PICUS PUBESCENS.**  
(78) P. R. R. Surv., vol. ix, p. 89; (632½) Birds of N. A., 1874, vol. ii, p. 509, pl. xlix, figg. 6, 7.
- Picus pubescens Gairdneri.**  
(632½) Birds of N. A., 1874, vol. ii, p. 512.
- PICUS SCALARIS.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 333; (78) P. R. R. Surv., vol. ix, p. 94; (87) Mex. Bound. Surv., vol. ii, p. 5, pl. iii; (104) Birds of N. A., 1860, p. 94, pl. xli, fig. 1; (632½) Birds of N. A., 1874, vol. ii, p. 515, pl. i, figg. 4, 5 (cut, p. 518).

- Picus scalaris lucasianus*.  
(632½) Birds of N. A., 1874, vol. ii, p. 519.
- Picus scapularis*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 333.
- Picus torquatus*.  
(31) Stansbury's Surv. Salt Lake [App. C], p. 319.
- Picus varius*.  
(31-a) Stansbury's Surv. Salt Lake [App. C], p. 326.
- PICUS VILLOsus*.  
(632½) Birds of N. A., 1874, vol. ii, p. 503, pl. xlix, figg. 3, 4, 5 (cut, p. 500).
- PICUS VILLOsus HARRISI*.  
(632½) Birds of N. A., 1874, vol. ii, p. 507 (cut, p. 502).
- Picus villosus major*.  
(78) P. R. R. Surv., vol. ix, p. 84.
- Picus villosus medius*.  
(78) P. R. R. Surv., vol. ix, p. 84.
- Picus villosus minor*.  
(78) P. R. R. Surv., vol. ix, p. 84.
- Pinicola*.  
(632½) Birds of N. A., 1874, vol. i, p. 452.
- Pinicola canadensis*.  
(78) P. R. R. Surv., vol. ix, p. 410.
- PINICOLA ENUCLEATOR*.  
(632½) Birds of N. A., 1874, vol. i, p. 453, pl. xxi, figg. 1, 2 (cuts, pp. 453, 454); (632½) Birds of N. A., 1874, App., p. 508.
- Pipilo*.  
(632½) Birds of N. A., 1874, vol. ii, p. 104.
- PIPILO AHERNII*.  
(78) P. R. R. Surv., vol. ix, p. 516; (87) Mex. Bound. Surv., vol. ii, p. 18; (104) Birds of N. A., 1860, p. 517, pl. xxx.
- (31-a) Stansbury's Surv. Salt Lake [App. C], p. 325; (32) Stansbury's Surv. Salt Lake [App. C], p. 330.
- (632½) Birds of N. A., 1874, vol. ii, p. 128, pl. xxxi, fig. 7 (cut, p. 128); (632½) Birds of N. A., 1874, App., p. 517.
- Pipilo albigula*.  
(99) Pr. Acad. Nat. Sci. Phila., 1859, p. 305.
- Pipilo arcticus*.  
(78) P. R. R. Surv., vol. ix, p. 514.
- Pipilo chlorura*.  
(87) Mex. Bound. Surv., vol. ii, p. 18.
- PIPILO CHLORURUS*.  
(632½) Birds of N. A., 1874, vol. ii, p. 131, pl. xxxi, fig. 4 (cut, p. 132); (78) P. R. R. Surv., vol. ix, p. 519; (632½) Birds of N. A., 1874, App., p. 517.
- PIPILO ERYTHROPHthalmus*.  
(78) P. R. R. Surv., vol. ix, p. 512; (632½) Birds of N. A., 1874, vol. ii, p. 109, pl. xxxi, figg. 2, 3 (cuts, pp. 104-9-10-12); *Ibid.*, App., p. 516.
- Pipilo erythrophthalmus Alleni*.  
(632½) Birds of N. A., 1874, vol. ii, p. 112.
- Pipilo fuscus*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 330.
- Pipilo fuscus*.  
(78) P. R. R. Surv., vol. ix, p. 517.
- PIPILO FUSCUS ALBIGULA*.  
(632½) Birds of N. A., 1874, vol. ii, p. 127, pl. xxxi, fig. 11.
- PIPILO FUSCUS CRISSALIS*.  
(632½) Birds of N. A., 1874, vol. ii, p. 122, pl. xxxi, fig. 8 (cut, p. 123).
- PIPILO FUSCUS MESOLEUCUS*.  
(632½) Birds of N. A., 1874, vol. ii, p. 125, pl. xxxi, fig. 10.
- PIPILO MACULATUS ARCTICUS*.  
(632½) Birds of N. A., 1874, vol. ii, p. 119, pl. xxxi, figg. 5, 6.
- PIPILO MACULATUS MEGALONTX*.  
(632½) Birds of N. A., 1874, vol. ii, p. 113, pl. xxxi, fig. 9 (cut, p. 113).
- PIPILO MACULATUS OREGONUS*.  
(632½) Birds of N. A., 1874, vol. ii, p. 116, pl. xxxi, fig. 12 (cut, p. 116).
- PIPILO MEGALONTX*.  
(78) P. R. R. Surv., vol. ix, p. 515; (87) Mex. Bound. Surv., vol. ii, p. 17; (104) Birds of N. A., 1860, p. 515, pl. lxxiii.
- PIPILO MESOLEUCUS*.  
(56) Pr. Acad. Nat. Sci. Phila., 1854, p. 119; (78) P. R. R. Surv., vol. ix, p. 518; (87) Mex. Bound. Surv., vol. ii, p. 18; (104) Birds of N. A., 1860, p. 518, pl. xxix; (632½) Birds of N. A., 1874, App., p. 516.
- Pipilo oregona*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 330.
- Pipilo oregonus*.  
(78) P. R. R. Surv., vol. ix, p. 513.
- Planesticus*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 12; *Ibid.*, p. 23.
- Planesticus migratorius*.  
(78) P. R. R. Surv., vol. ix, p. 218.
- Platalea ajaja*.  
(78) P. R. R. Surv., vol. ix, p. 686; (87) Mex. Bound. Surv., vol. ii, p. 25.
- Platycichla*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 4; *Ibid.*, July, 1864, Part I, p. 32; *Ibid.*, June, 1866, Part I, p. 418, 436.
- Platycichla brevipes*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 32; *Ibid.*, June, 1866, Part I, p. 436.
- Plectrophanes*.  
(632½) Birds of N. A., 1874, vol. i, p. 510.
- PLECTROPHANES LAPPONICUS*.  
(78) P. R. R. Surv., vol. ix, p. 433; (632½) Birds of N. A., 1874, vol. i, p. 515, pl. xxiv, fig. 7 (cut, p. 515).
- PLECTROPHANES MACCOWNII*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 437; (632½) Birds of N. A., 1874, vol. i, p. 523, pl. xxiv, fig. 1.
- PLECTROPHANES MELANOMUS*.  
(78) P. R. R. Surv., vol. ix, p. 436; (104) Birds of N. A., 1860, p. 432, pl. lxxiv, fig. 2.
- Plectrophanes (Plectrophanes) nivalis*.  
(78) P. R. R. Surv., vol. ix, p. 432.

**PLECTROPHANES ORNATUS.**

- (78) P. R. R. Surv., vol. ix, p. 435; (632½) Birds of N. A., 1874, vol. i, p. 530, pl. xxiv, fig. 3; *Ibid.*, App., p. 512.

**PLECTROPHANES ORNATUS MELANOMUS.**

- (632½) Birds of N. A., 1874, vol. i, p. 521, pl. xxiv, fig. 6.

**PLECTROPHANES PICTUS.**

- (78) P. R. R. Surv., vol. ix, p. 434; (632½) Birds of N. A., 1874, vol. i, p. 518, pl. xxiv, figg. 4, 5.

**Plotus anHINGA.**

- (78) P. R. R. Surv., vol. ix, p. 883.

**Pluvialis virginiana.**

- (6) Lit. Rec. and Journ. Linnæan Ass. Penn. Col., Oct., 1845, p. 254.

**Podiceps auritus.**

- (78) P. R. R. Surv., vol. ix, p. 897.

**PODICEPS CALIFORNICUS.**

- (78) P. R. R. Surv., vol. ix, p. 896; (104) Birds of N. A., 1860, p. 896, pl. viii, young.

**PODICEPS CLARKII.**

- (78) P. R. R. Surv., vol. ix, p. 895; (87) Mex. Bound. Surv., vol. ii, p. 28; (104) Birds of N. A., 1860, p. 895, pl. c.

**Podiceps cornutus.**

- (78) P. R. R. Surv., vol. ix, p. 895.

**Podiceps cristatus.**

- (78) P. R. R. Surv., vol. ix, p. 893.

**PODICEPS DOMINICUS.**

- (87) Mex. Bound. Surv., vol. ii, p. 28; (104) Birds of N. A., 1860, p. 897, pl. xcix, fig. 1.

**Podiceps grisegena.**

- (78) P. R. R. Surv., vol. ix, p. 892.

**PODICEPS OCCIDENTALIS.**

- (78) P. R. R. Surv., vol. ix, p. 894; (104) Birds of N. A., 1860, p. 894, pl. xxxviii.

**PONILYMBUS PODICEPS.**

- (104) Birds of N. A., 1860, p. 898, pl. ix, young.

**Podylimbus podiceps.**

- (78) P. R. R. Surv., vol. ix, p. 898.

**Pœcilopternis borealis.**

- (78) P. R. R. Surv., vol. ix, p. 25.

**Pœcilopternis elegans.**

- (78) P. R. R. Surv., vol. ix, p. 28.

**Pœcilopternis exypterus.**

- (78) P. R. R. Surv., vol. ix, p. 30.

**Pœcilopternis lineatus.**

- (78) P. R. R. Surv., vol. ix, p. 28.

**Pœcilopternis montanus.**

- (78) P. R. R. Surv., vol. ix, p. 26.

**Pœcilopternis pennsylvanicus.**

- (78) P. R. R. Surv., vol. ix, p. 29.

**Polioptila.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 67; (632½) Birds of N. A., 1874, vol. i, p. 77.

**Polioptila albiloris.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 70.

**Polioptila bilineata.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 72.

**Polioptila ludlowi.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 72.

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**POLIOPTILA CÆRULEA.**

- (78) P. R. R. Surv., vol. ix, p. 380; (87) Mex. Bound. Surv., vol. ii, p. 13; (115) Review of N. A. Birds, July, 1864, Part I, p. 74; (632½) Birds of N. A., 1874, vol. i, p. 78, pl. vi, fig. 5 (cuts, pp. 77, 79); *Ibid.*, App., p. 501.

**Polioptila dumicola.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 73.

**Polioptila leucogastra.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 69.

**POLIOPTILA MELANURA.**

- (78) P. R. R. Surv., vol. ix, p. 382; (99) Pr. Acad. Nat. Sci. Phila., 1850, p. 304; (115) Review of N. A. Birds, July, 1864, Part I, p. 68; (632½) Birds of N. A., 1874, vol. i, p. 81, pl. vi, fig. 7; *Ibid.*, App., p. 502.

**Polioptila nigriceps.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 69.

**POLIOPTILA PLUMBEA.**

- (78) P. R. R. Surv., vol. ix, p. 382; (87) Mex. Bound. Surv., vol. ii, p. 14; (104) Birds of N. A., 1860, p. 382, pl. xxxiii, fig. 1; (115) Review of N. A. Birds, July, 1864, Part I, p. 74; (632½) Birds of N. A., 1874, vol. i, p. 80, pl. vi, fig. 6.

**Polioptila superciliaris.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 71.

**Polioptilina.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 65; (632½) Birds of N. A., 1874, vol. i, p. 77.

**Polyborus.**

- (632½) Birds of N. A., 1874, vol. iii, p. 176.

**Polyborus tharus.**

- (78) P. R. R. Surv., vol. ix, p. 45; (87) Mex. Bound. Surv., vol. ii, p. 4.

**POLYBORUS THARUS AUDUBONI.**

- (632½) Birds of N. A., 1874, vol. iii, p. 178 (cuts, pp. 176, 179).

**Polysticta Stelleri.**

- (78) P. R. R. Surv., vol. ix, p. 801.

**Poœcetes.**

- (632½) Birds of N. A., 1874, vol. i, p. 544.

**POECETES GRAMINEUS.**

- (78) P. R. R. Surv., vol. ix, p. 447; (87) Mex. Bound. Surv., vol. ii, p. 15; (632½) Birds of N. A., 1874, vol. i, p. 545 (cuts, pp. 545, 546), vol. ii, pl. xxix, fig. 1.

**Poospiza.**

- (632½) Birds of N. A., 1874, vol. i, p. 569.

**POOSPIZA BELLI.**

- (78) P. R. R. Surv., vol. ix, p. 470; (632½) Birds of N. A., 1874, vol. i, p. 593, pl. xxvi, fig. 9 (cut, p. 595); (632½) *Ibid.*, App., p. 514.

**Poospiza Belli nevadensis.**

- (632½) Birds of N. A., 1874, vol. i, p. 594.

**POOSPIZA BILINEATA.**

- (78) P. R. R. Surv., vol. ix, p. 470; (87) Mex. Bound. Surv., vol. ii, p. 15; (632½) Birds of N. A., 1874, vol. i, p. 590, pl. xxvi, fig. 8 (cuts, pp. 589, 590).

- Porphyrio martinica*.  
(78) P. R. R. Surv., vol. ix, p. 753.
- Porzana carolina*.  
(6) Lit. Rec. and Journ. Linnean Assoc. Penn. Col., Oct., 1845, p. 255.
- Porzana (Porzana) carolina*.  
(78) P. R. R. Surv., vol. ix, p. 749.
- Porzana carolina*.  
(87) Mex. Bound. Surv., vol. ii, p. 26.
- Porzana jamaicensis*.  
(6) Lit. Rec. and Journ. Linnean Assoc. Penn. Col., Oct., 1845, p. 257; (78) P. R. R. Surv., vol. ix, p. 749.
- Porzana noveboracensis*.  
(6) Lit. Rec. and Journ. Linnean Assoc. Penn. Col., Oct., 1845, p. 255; (78) P. R. R. Surv., vol. ix, p. 750.
- Procellaria gigantea*.  
(78) P. R. R. Surv., vol. ix, p. 825.
- Procellaria glacialis*.  
(78) P. R. R. Surv., vol. ix, p. 825.
- Procellaria meridionalis*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 335; (78) P. R. R. Surv., vol. ix, p. 827.
- Procellaria pacifica*.  
(78) P. R. R. Surv., vol. ix, p. 826.
- Procellaria pelagica*.  
(78) P. R. R. Surv., vol. ix, p. 831.
- Procellaria tenuirostris*.  
(78) P. R. R. Surv., vol. ix, p. 826.
- Progne*.  
(115) Review of N. A. Birds, May, 1865, Part I, pp. 269, 271, 272; (6324) Birds of N. A., 1874, vol. i, p. 327.
- Progne chalybea*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 282.
- Progne concolor*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 278.
- Progne cryptoleuca*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 277.
- Progne domestica*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 282.
- Progne dominicensis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 279.
- Progne elegans*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 275.
- Progne fuscata*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 278.
- Progne fusca*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 282.
- Progne interpres*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 278.
- Progne subis*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 282.
- Progne subis cryptoleuca*.  
(6324) Birds of N. A., 1874, vol. i, p. 332.
- Progne tapera*.  
(115) Review of N. A. Birds, May, 1865, Part I, p. 282.
- Protonotaria*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 173; (6324) Birds of N. A., 1874, vol. i, p. 183.
- PROTONOTARIA CITREA*.  
(78) P. R. R. Surv., vol. ix, p. 239; (115) Review of N. A. Birds, August, 1864, Part I, p. 173; (6324) Birds of N. A., 1874, vol. i, p. 184, pl. x, fig. 8 (cuts, pp. 183, 184).
- Psaltria plumbea*.  
(56) Pr. Acad. Nat. Sci. Phila., 1854, p. 118.
- Psaltiriparus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 84; (6324) Birds of N. A., 1874, vol. i, p. 107.
- PSALTIRIPARUS MELANOTIS*.  
(78) P. R. R. Surv., vol. ix, p. 396; (87) Mex. Bound. Surv., vol. ii, p. 14, pl. xv, fig. 3; (104) Birds of N. A., 1860, p. 396, pl. lili, fig. 3; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 84; (6324) Birds of N. A., 1874, vol. i, p. 108, pl. vii, fig. 8 (cut, p. 108).
- Psaltiriparus minimus*.  
(78) P. R. R. Surv., vol. ix, p. 397; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 84.
- PSALTIRIPARUS MINIMUS MINIMUS*.  
(6324) Birds of N. A., 1874, vol. i, p. 109, pl. vii, fig. 9 (cut, p. 109).
- PSALTIRIPARUS MINIMUS PLUMBEUS*.  
(6324) Birds of N. A., 1874, vol. i, p. 110, pl. vii, fig. 10.
- PSALTIRIPARUS PLUMBEUS*.  
(78) P. R. R. Surv., vol. ix, p. 398; (104) Birds of N. A., 1860, p. 398, pl. xxxiii, fig. 2; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 84.
- Psarocolius auricollis*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 331.
- Pseudogryphus*.  
(6324) Birds of N. A., 1874, vol. iii, p. 338.
- PSEUDOGRYPHUS CALIFORNIANUS*.  
(6324) Birds of N. A., 1874, vol. iii, p. 338 (cuts, pp. 338-340, 341-353, 356).
- Psilorhinus*.  
(6324) Birds of N. A., 1874, vol. ii, p. 303.
- PSILORHINUS MORIO*.  
(78) P. R. R. Surv., vol. ix, p. 502; (87) Mex. Bound. Surv., vol. ii, p. 21; (6324) Birds of N. A., 1874, vol. ii, p. 304, pl. xlii, fig. 2 (cuts, pp. 303, 304); (104) Birds of N. A., 1860, p. 502, pl. lxxviii, figg. 1, 2.
- Psalittacus*.  
(6324) Birds of N. A., 1874, vol. ii, p. 565.

**Pterocyanes Raflesii.**

(31) Stansbury's Surv. Salt Lake [App. C], p. 322.

**Ptilogonatins.**

(115) Review of N. A. Birds, May, 1866, Part I, pp. 461, 466; (632½) Birds of N. A., 1874, vol. i, p. 404.

**Ptilogonyx.**

(115) Review of N. A. Birds, May, 1866, Part I, p. 410.

**Ptilogonyx cradatus.**

(115) Review of N. A. Birds, May, 1866, Part I, p. 413.

**Ptilogonyx cinereus.**

(115) Review of N. A. Birds, May, 1866, Part I, p. 410.

**Pychorhamphus aleuticus.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 335; (78) P. R. R. Surv., vol. ix, p. 910.

**Puffinus anglorum.**

(78) P. R. R. Surv., vol. ix, p. 824.

**Puffinus cinereus.**

(78) P. R. R. Surv., vol. ix, p. 835.

**Puffinus fuliginosus.**

(78) P. R. R. Surv., vol. ix, p. 834.

**Puffinus major.**

(78) P. R. R. Surv., vol. ix, p. 833.

**Puffinus oberurus.**

(78) P. R. R. Surv., vol. ix, p. 835.

**Pyrrhuloxia tenuirostris.**

(129) Chicago Acad. Sci., 1860, p. 322, pl. xxxiv, fig. 2.

**Pyrochelidon.**

(115) Review of N. A. Birds, May, 1866, Part I, pp. 270, 265, 308.

**Pyrranga.**

(632½) Birds of N. A., 1874, vol. i, p. 432.

**Pyrranga ustula.**

(78) P. R. R. Surv., vol. ix, p. 301; (87) Mex. Bound. Surv., vol. ii, p. 11.

**PYRRANGA USTULA USTULA.**

(632½) Birds of N. A., 1874, vol. i, p. 441, pl. xx, figg. 5, 6 (cut, p. 442).

**PYRRANGA USTULA COOPERI.**

(632½) Birds of N. A., 1874, vol. i, p. 444, pl. xx, figg. 1, 2.

**PYRRANGA HEPATICA.**(78) P. R. R. Surv., vol. ix, p. 302; (104) Birds of N. A., 1860, p. 302, pl. xxxi; (632½) Birds of N. A., 1874, vol. i, p. 440, pl. xx, figg. 9, 10; *Ibid.*, App., p. 508.**PYRRANGA LUDOVICIANA.**

(78) P. R. R. Surv., vol. ix, p. 303; (632½) Birds of N. A., 1874, vol. i, p. 437, pl. xx, figg. 3, 4 (cut, p. 435).

**PYRRANGA RUBRA.**

(78) P. R. R. Surv., vol. ix, p. 300; (632½) Birds of N. A., 1874, vol. i, p. 435, pl. xx, figg. 7, 8 (cut, p. 432).

**Pyrgilla.**

(632½) Birds of N. A., 1874, vol. i, p. 525.

**Pyrgilla domestica.**

(632½) Birds of N. A., 1874, vol. i, p. 525, pl. xxiii, fig. 12 (cuts, pp. 525, 526).

**Pyrrhuloxia.**

(632½) Birds of N. A., 1874, vol. i, p. 524.

**Pyrocephalus.**

(632½) Birds of N. A., 1874, vol. ii, p. 386.

**Pyrocephalus mexicanus.**

(632½) Birds of N. A., 1874, App., p. 520.

**Pyrocephalus rubineus.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 329; (78) P. R. R. Surv., vol. ix, p. 201; (87) Mex. Bound. Surv., vol. ii, p. 9.

**PYROCEPHALUS RUBINEUS MEXICANUS.**

(632½) Birds of N. A., 1874, vol. ii, p. 387, pl. xlv, fig. 5 (cuts, pp. 386, 388).

**Pyrrhula.**

(632½) Birds of N. A., 1874, vol. i, p. 456.

**PYRRHULA CASSINI.**(632½) Birds of N. A., 1874, vol. i, p. 457, pl. xxiii, fig. 11 (cuts, p. 457); *Ibid.*, App., p. 508.**PYRRHULA COCCINEA.**

(129) Chicago Acad. Sci., 1860, p. 316, pl. xxix, fig. 1.

**Pyrrhula inornata.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**Pyrrhuloxia.**

(632½) Birds of N. A., 1874, vol. ii, p. 95.

**Pyrrhuloxia alnuta.**

(78) P. R. R. Surv., vol. ix, p. 508; (87) Mex. Bound. Surv., vol. ii, p. 17; (90) Pr. Acad. Nat. Sci. Phila., 1850, p. 304; (632½) Birds of N. A., 1874, vol. ii, p. 95, pl. xxx, fig. 3 (cuts, pp. 95, 96).

**Querquedula carolinensis.**

(31) Stansbury's Surv. Salt Lake [App. C], p. 322.

**Querquedula cyanoptera.**

(78) P. R. R. Surv., vol. ix, p. 780; (87) Mex. Bound. Surv., vol. ii, p. 26.

**Querquedula discors.**

(78) P. R. R. Surv., vol. ix, p. 779; (87) Mex. Bound. Surv., vol. ii, p. 26.

**Quiscalinae.**

(632½) Birds of N. A., 1874, vol. ii, p. 202.

**Quiscalus.**

(632½) Birds of N. A., 1874, vol. ii, p. 212.

**Quiscalus laticus.**

(78) P. R. R. Surv., vol. ix, p. 556; (104) Birds of N. A., 1860, p. 556, pl. xxxii.

**Quiscalus macrourus.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 331; (78) P. R. R. Surv., vol. ix, p. 553.

**QUISCALUS MACROURA.**

(87) Mex. Bound. Surv., vol. ii, p. 20, pl. xx; (104) Birds of N. A., 1860, p. 563, pl. lviii.

**QUISCALUS MAJOR.**

(78) P. R. R. Surv., vol. ix, p. 555; (87) Mex. Bound. Surv., vol. ii, p. 20; (632½) Birds of N. A., 1874, vol. ii, p. 222, pl. xxxvi, figg. 3, 4.

**QUISCALUS MAJOR MACRURUS.**

(632½) Birds of N. A., 1874, vol. ii, p. 225, pl. xxxvi, figg. 1, 2.

**QUISCALUS PURPUREUS.**

(632½) Birds of N. A., 1874, vol. ii, p. 214, pl. xxxvii, fig. 1 (cuts, pp. 212, 215).

**QUISCALUS PURPUREUS ZENKUS.**

(632½) Birds of N. A., 1874, vol. ii, p. 218 (cut, p. 218).

- QUISCALUS PURPUREUS AGLEUS.**  
(632½) Birds of N. A., 1874, vol. ii, p. 221, pl. xxxvii, fig. 2 (cut, p. 221).
- Quiscalus versicolor.**  
(78) P. R. R. Surv., vol. ix, p. 555.
- Rallus crepitans.**  
(78) P. R. R. Surv., vol. ix, p. 747.
- Rallus elegans.**  
(78) P. R. R. Surv., vol. ix, p. 746.
- Rallus virginianus.**  
(78) P. R. R. Surv., vol. ix, p. 748; (87) Mex. Bound. Surv., vol. ii, p. 26.
- Ramphocinclus.**  
(115) Review of N. A. Birds, July, 1864, Part I, pp. 39, 41.
- Ramphocinclus brachyurus.**  
(115) Review of N. A. Birds, July, 1864, Part I, p. 41.
- Recurvirostra americana.**  
(31) Stansbury's Surv. Salt Lake [App. C], p. 320; (78) P. R. R. Surv., vol. ix, p. 703; (87) Mex. Bound. Surv., vol. ii, p. 25.
- Recurvirostra occidentalis.**  
(31-a) Stansbury's Surv. Salt Lake [App. C], p. 328; (32) Stansbury's Surv. Salt Lake [App. C], p. 334.
- Regulæ.**  
(115) Review of N. A. Birds, July, 1864, Part I, p. 65; (632½) Birds of N. A., 1874, vol. i, p. 72.
- Regulus.**  
(115) Review of N. A. Birds, July, 1864, Part I, p. 65; (632½) Birds of N. A., 1874, vol. i, p. 72.
- REGULUS CALENDULA.**  
(78) P. R. R. Surv., vol. ix, p. 226; (87) Mex. Bound. Surv., vol. ii, p. 9; (115) Review of N. A. Birds, July, 1864, Part I, p. 66; (632½) Birds of N. A., 1874, vol. i, p. 75, pl. v, fig. 6; *Ibid.*, App., p. 501 (cut, p. 501).
- REGULUS CUVIERI.**  
(78) P. R. R. Surv., vol. ix, p. 228; (115) Review of N. A. Birds, July, 1864, Part I, p. 66; (632½) Birds of N. A., 1874, vol. i, p. 75, pl. v, fig. 7.
- REGULUS SATRAPA.**  
(78) P. R. R. Surv., vol. ix, p. 227; (115) Review of N. A. Birds, July, 1864, Part I, p. 65; (632½) Birds of N. A., 1874, vol. i, p. 73, pl. v, fig. 8 (cuts, pp. 72, 73).
- Rhamphocinclus.**  
(115) Review of N. A. Birds, June, 1864, Part I, p. 4.
- Rhamphopsis flammigerus.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 330.
- Rhinogryphus.**  
(632½) Birds of N. A., 1874, vol. iii, p. 343.
- RHINOGRYPHUS AURA.**  
(632½) Birds of N. A., 1874, vol. iii, p. 344 (cuts, pp. 343, 346, 355-356.)
- Rhodinocincta.**  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 91.
- Rhodinocichla rosea.**  
(115) Review of N. A. Birds, Aug., 7, 1864, Part I, p. 91.
- Rhodostethia rosea.**  
(78) P. R. R. Surv., vol. ix, p. 857.
- Rhyacophilus solitarius.**  
(78) P. R. R. Surv., vol. ix, p. 738.
- RHYNCHOPALCO FEMORALIS.**  
(632½) Birds of N. A., 1874, vol. iii, p. 155 (cuts, pp. 154, 155, 157).
- Rhynchophanes Maccownii.**  
(78) P. R. R. Surv., vol. ix, p. 437.
- Rhynchope nigræ.**  
(78) P. R. R. Surv., vol. ix, p. 866; (87) Mex. Bound. Surv., vol. ii, p. 28.
- Rhynchopsitta pachyrhyncha.**  
(78) P. R. R. Surv., vol. ix, p. 66; (87) Mex. Bound. Surv., vol. ii, p. 5.
- Rissa brevirostris.**  
(78) P. R. R. Surv., vol. ix, p. 855.
- Rissa nivea.**  
(78) P. R. R. Surv., vol. ix, p. 855.
- Rissa septentrionalis.**  
(78) P. R. R. Surv., vol. ix, p. 854.
- Rissa tridactyla.**  
(78) P. R. R. Surv., vol. ix, p. 854.
- Rostrhamus.**  
(632½) Birds of N. A., 1874, vol. iii, p. 207.
- ROSTRHAMUS SOCIABILIS.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 327; (78) P. R. R. Surv., vol. ix, p. 36; (104) Birds of N. A., 1860, p. 28, pl. lxxv, figs. 1, 2, adult and young.
- ROSTRHAMUS SOCIABILIS PLUMBEUS.**  
(632½) Birds of N. A., 1874, vol. iii, p. 209 (cuts, pp. 208, 211).
- Sagmatorrhina labradoria.**  
(78) P. R. R. Surv., vol. ix, p. 904.
- Salpinctes.**  
(115) Review of N. A. Birds, Aug., 1864, Part I, pp. 94, 109; (632½) Birds of N. A., 1874, vol. i, p. 134.
- SALPINCTES OBSOLETUS.**  
(78) P. R. R. Surv., vol. ix, p. 357; (87) Mex. Bound. Surv., vol. ii, p. 13; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 110; (632½) Birds of N. A., 1874, vol. i, p. 123, pl. viii, fig. 3 (cuts, pp. 125, 126); *Ibid.*, App., p. 503.
- Saltator rufiventris.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 336.
- Saurophagus Bairdii.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 329.
- Saurophagus sulphuratus.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 329.
- Saxicola.**  
(115) Review of N. A. Birds, July, 1864, Part I, p. 61; (632½) Birds of N. A., 1874, vol. i, p. 58.
- SAXICOLA ÆNANTHE.**  
(78) P. R. R. Surv., vol. ix, p. 220; (115) Review of N. A. Birds, July, 1864, Part I, p. 61; (632½) Birds of N. A., 1874, vol. i, p. 60, pl. v, fig. 5 (cuts, pp. 59, 60); (632½) *Ibid.*, App., p. 501.
- Saxicola œnanthoides.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 329.



**Saxicolinus.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 2; *Ibid.*, July, 1864, Part I, pp. 60, 61; *Ibid.*, Aug., 1864, Part I, p. 164; (632½) Birds of N. A., 1874, vol. i, p. 59.

**Sayornis.**

- (632½) Birds of N. A., 1874, vol. ii, p. 339; *Ibid.*, App., p. 519.

**SAYORNIS FUSCUS.**

- (78) P. R. R. Surv., vol. ix, p. 184; (87) Mex. Bound. Surv., vol. ii, p. 8; (632½) Birds of N. A., 1874, vol. ii, p. 343, pl. xiv, fig. 2; *Ibid.*, App., p. 519 (cut).

**SAYORNIS NIGRICANS.**

- (78) P. R. R. Surv., vol. ix, p. 183; (87) Mex. Bound. Surv., vol. ii, p. 8; (99) Pr. Acad. Nat. Sci. Phila., 1859 (1860) p. 303; (632½) Birds of N. A., 1874, vol. ii, p. 340, pl. xiv, fig. 1, (cuts, pp. 341, 344); *Ibid.*, App., p. 520 (cut).

**SAYORNIS SAYUS.**

- (78) P. R. R. Surv., vol. ix, p. 185; (8) Mex. Bound. Surv., vol. ii, p. 9; (632½) Birds of N. A., 1874, vol. ii, p. 347, pl. xiv, fig. 3; *Ibid.*, App., p. 519 (cut).

**Scardafella.**

- (632½) Birds of N. A., 1874, vol. iii, p. 387.

**SCARDAFELLA INCA.**

- (632½) Birds of N. A., 1874, vol. iii, p. 387, pl. lviii, fig. 7 (cuts, pp. 387, 388).

**Scardafella squamosa.**

- (78) P. R. R. Surv., vol. ix, p. 605; (87) Mex. Bound. Surv., vol. ii, p. 22.

**Schmickias alpina americana.**

- (78) P. R. R. Surv., vol. ix, p. 719.

**Sciurus.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 214.

**Sciurus aurocapillus.**

- (115) Review of N. A., Birds, Apr., 1865, Part I, pp. 214, 267.

**Sciurus ludoviciana.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 217.

**Sciurus noveboracensis.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 215.

**Scolecophagus.**

- (632½) Birds of N. A., 1874, vol. ii, p. 202.

**SCOLECOPHAGUS CYANOCEPHALUS.**

- (78) P. R. R. Surv., vol. ix, p. 552; (87) Mex. Bound. Surv., vol. ii, p. 20; (632½) Birds of N. A., 1874, vol. ii, p. 206, pl. xxxv, fig. 3.

**SCOLECOPHAGUS FERRUGINEUS.**

- (78) P. R. R. Surv., vol. ix, p. 551; (632½) Birds of N. A., 1874, vol. ii, p. 203, pl. xxxv, fig. 4 (cuts, pp. 202, 204).

**Scolecophagus mexicanus.**

- (23) Stansbury's Surv. Salt Lake [App. C], p. 231.

**Scoops.**

- (632½) Birds of N. A., 1874, vol. iii, p. 47.

**SCOOPS ASIO.**

- (78) P. R. R. Surv., vol. ix, p. 61; (632½) Birds of N. A., 1874, vol. iii, p. 49 (cuts, pp. 49, 51, 98, 99, 100, 101).

**Scoops asio floridana.**

- (632½) Birds of N. A., 1874, vol. iii, p. 51.

**SCOOPS ASIO KENNICOTTI.**

- (632½) Birds of N. A., 1874, vol. iii, p. 53 (cut, p. 55).

**Scoops asio Maccalli.**

- (632½) Birds of N. A., 1874, vol. iii, p. 52.

**SCOOPS FLAMMEOLA.**

- (632½) Birds of N. A., 1874, vol. iii, p. 59 (cut, p. 59).

**SCOOPS KENNICOTTI.**

- (129) Chicago Acad. Sci., 1869, p. 311, pl. xxvii.

**SCOOPS MCCALLI.**

- (78) P. R. R. Surv., vol. ix, p. 52; (87) Mex. Bound. Surv., vol. ii, p. 4, pl. i; (104) Birds of N. A., 1860, p. 50, pl. xxxix.

**SCOTIAPTEX CINEREUM.**

- (632½) Birds of N. A., 1874, vol. iii, p. 30 (cuts, pp. 30, 98, 99, 100, 101, 102).

**Seiurus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 166.

**Seiurus.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 214; (632½) Birds of N. A., 1874, vol. i, p. 279.

**SEIURUS AUROCAPILLUS.**

- (78) P. R. R. Surv., vol. ix, p. 260; (632½) Birds of N. A., 1874, vol. i, p. 280, pl. xiv, fig. 11 (cuts, pp. 279, 280).

**SEIURUS AUROVICIANUS.**

- (78) P. R. R. Surv., vol. ix, p. 262; (87) Mex. Bound. Surv., vol. ii, p. 10; (104) Birds of N. A., 1860, p. 262, pl. lxxx, fig. 12; (632½) Birds of N. A., 1874, vol. i, p. 287, pl. xiv, fig. 13; *Ibid.*, App., p. 506.

**SEIURUS NOVEBORACENSIS.**

- (78) P. R. R. Surv., vol. ix, p. 261; (104) Birds of N. A., 1860, p. 261, pl. lxxx, fig. 1; (632½) Birds of N. A., 1874, vol. i, p. 283, pl. xlv, fig. 12 (cut, p. 287).

**Selasphorus.**

- (632½) Birds of N. A., 1874, vol. ii, p. 458.

**SELASPHORUS PLATYCRUCUS.**

- (78) P. R. R. Surv., vol. ix, p. 135; (87) Mex. Bound. Surv., vol. ii, p. 6, pl. v, figg. 1, 2; (104) Birds of N. A., 1860, p. 135, pl. xliii, figg. 1, 2; (632½) Birds of N. A., 1874, vol. ii, p. 462, pl. xlvii, fig. 5 (cut, p. 462).

**SELASPHORUS RUFUS.**

- (78) P. R. R. Surv., vol. ix, p. 134; (87) Mex. Bound. Surv., vol. ii, p. 6; (632½) Birds of N. A., 1874, vol. ii, p. 459, pl. xlvii, fig. 4 (cuts, pp. 458, 460).

**Semimerula.**

- (115) Review of N. A. Birds, June, 1864, Part I, p. 4; *Ibid.*, July, 1864, Part I, p. 31.

**Semimerula aurantia.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 34.

**Setophaga.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, pp. 236, 238; *Ibid.*, May, 1865, Part I, pp. 253, 256, 258; (632½) Birds of N. A., 1874, vol. i, p. 322.

*Setophaga aurantiaca.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 261.

*Setophaga Belli.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Setophaga brunneiceps.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 258.

*Setophaga castaneo-capilla.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 259.

*Setophaga flammea.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 259.

*Setophaga lachrymosa.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 263.

*Setophaga melanocephala.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 258.

*SETOPHAGA MINIATA.*

- (78) P. R. R. Surv., vol. ix, p. 299; (104) Birds of N. A., 1860, p. 299, pl. lxxviii, fig. 1; (115) Review of N. A. Birds, May, 1865, Part I, p. 259.

*Setophaga multicolor.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 256.

*Setophaga ornata.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 258.

*SETOPHAGA PICTA.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329; (78) P. R. R. Surv., vol. ix, p. 298; (87) Mex. Bound. Surv., vol. ii, p. 11; (104) Birds of N. A., 1860, p. 298, pl. lxxvii, fig. 2; (115) Review of N. A. Birds, May, 1865, Part I, p. 256; (6324) Birds of N. A., 1874, App., p. 507.

*Setophaga rubra.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Setophaga rubifrons.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Setophaga ruficoronata.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 258.

*SETOPHAGA RUTICILLA.*

- (78) P. R. R. Surv., vol. ix, p. 297; (115) Review of N. A. Birds, May, 1865, Part I, p. 256; (6324) Birds of N. A., 1874, vol. i, p. 322, pl. xvi, fig. 1 (cuts, pp. 322, 323).

*Setophaga torquata.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 261.

*Setophaga verticalis.*

- (115) Review of N. A. Birds, May, 1865, Part I, p. 258.

*Setophaga vulnerata.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Setophaga.*

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 167; *Ibid.*, Apr., 1865, Part I, p. 235; (6324) Birds of N. A., 1874, vol. i, p. 211.

*Sialia.*

- (115) Review of N. A. Birds, July, 1864, Part I, p. 62; (6324) Birds of N. A., 1874, vol. i, p. 62.

*SIALIA ALECTICA.*

- (78) P. R. R. Surv., vol. ix, p. 224; (87) Mex. Bound. Surv., vol. ii, p. 9; (94) P. R. R. Surv., vol. x, p. 12, pl. xxxv; (115) Review of N. A. Birds, July, 1864, Part I, p. 64; (6324) Birds of N. A., 1874, vol. i, p. 67, pl. v, fig. 4.

*Sialia azurea.*

- (115) Review of N. A. Birds, July, 1864, Part I, p. 62.

*Sialia macroptera.*

- (31) Stansbury's Surv. Salt Lake [App. C], p. 314; (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

*SIALIA MEXICANA.*

- (78) P. R. R. Surv., vol. ix, p. 222; (87) Mex. Bound. Surv., vol. ii, p. 9; (115) Review of N. A. Birds, July, 1864, Part I, p. 62; (6324) Birds of N. A., 1874, vol. i, p. 65, pl. v, fig. 2; *Ibid.*, App., p. 501.

*SIALIA SIALIS.*

- (78) P. R. R. Surv., vol. ix, p. 222; (115) Review of N. A. Birds, July, 1864, Part I, p. 62; (6324) Birds of N. A., 1874, vol. i, p. 62, pl. v, fig. 3 (cuts, pp. 62, 63).

*SIMORHYNCHUS CASMINI.*

- (129) Chicago Acad. Sci., 1869, p. 324, pl. xxxi, fig. 2.

*Simorhynchus cristatellus.*

- (78) P. R. R. Surv., vol. ix, p. 306.

*Sitta.*

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 86; (6324) Birds of N. A., 1874, vol. i, p. 114.

*Sitta aculeata.*

- (104) Birds of N. A., 1860, p. 375, pl. xxxiii, fig. 3; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 86.

*SITTA CANADENSIS.*

- (78) P. R. R. Surv., vol. ix, p. 376; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 87; (6324) Birds of N. A., 1874, vol. i, p. 113, pl. viii, figg. 7, 8.

*SITTA CAROLINENSIS.*

- (78) P. R. R. Surv., vol. ix, p. 374; (104) Birds of N. A., 1860, p. 374, pl. xxxiii, fig. 4; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 86.

*SITTA CAROLINENSIS ACULEATA.*

- (6324) Birds of N. A., 1874, vol. i, p. 117 (cut, p. 115).

*SITTA CAROLINENSIS CAROLINENSIS.*

- (6324) Birds of N. A., 1874, vol. i, p. 114, pl. viii, figg. 1, 2 (cut, p. 114).

*SITTA FUSILLA.*

- (78) P. R. R. Surv., vol. ix, p. 377; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 86; (6324) Birds of N. A., 1874, vol. i, p. 122, pl. viii, fig. 9; *Ibid.*, App., p. 502.

*SITTA PYOMEA.*

- (78) P. R. R. Surv., vol. ix, p. 378; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 86; (6324) Birds of N. A., 1874, vol. i, p. 123, pl. viii, fig. 10; *Ibid.*, App., p. 502.

**Sittacinae.**

(632½) Birds of N. A., 1874, vol. ii, p. 585.

**Sittinae.**(115) Review of N. A. Birds, July, 1864, Part I, p. 77; *Ibid.*, Aug., 1864, Part I, p. 86; (632½) Birds of N. A., 1874, vol. i, p. 113.**Somateria mollissima.**

(78) P. R. R. Surv., vol. ix, p. 808.

**Somateria nigra.**

(78) P. R. R. Surv., vol. ix, p. 810.

**Somateria spectabilis.**

(78) P. R. R. Surv., vol. ix, p. 810.

**Spatula clypeata.**

(78) P. R. R. Surv., vol. ix, p. 781; (87) Mex. Bound. Surv., vol. ii, p. 27.

**Spectyla.**

(632½) Birds of N. A., 1874, vol. iii, p. 88.

**Spermotito cucularia hyogaia.**

(632½) Birds of N. A., 1874, vol. iii, p. 90 (cuts, pp. 88-98, 99, 100, 101).

**Spermophilus.**

(632½) Birds of N. A., 1874, vol. ii, p. 90.

**Spermophilus albogularis.**

(82) Stansbury's Surv. Salt Lake [App. C], p. 330.

**Spermophila bairdventris.**

(128) Chicago Acad. Sci., 1860, p. 319, pl. xxviii, fig. 3.

**Spermophila moreletii.**

(78) P. R. R. Surv., vol. ix, p. 506; (87) Mex. Bound. Surv., vol. ii, p. 17, pl. xvi, figg. 2, 3; (104) Birds of N. A., 1860, p. 506, pl. liv, figg. 2, 3; (632½) Birds of N. A., 1874, vol. ii, p. 91, pl. xxix, fig. 17 (cuts, pp. 90, 91).

**Sphyrapicus.**

(632½) Birds of N. A., 1874, vol. ii, p. 535.

**Sphyrapicus nuchalis.**

(78) P. R. R. Surv., vol. ix, pp. 103, 921; (104) Birds of N. A., 1860, pp. 103, 921, pl. xxxv, figg. 1, 2.

**Sphyrapicus ruber.**

(78) P. R. R. Surv., vol. ix, p. 104.

**Sphyrapicus thyroideus.**

(78) P. R. R. Surv., vol. ix, p. 106; (632½) Birds of N. A., 1874, vol. ii, p. 547, pl. lvi, fig. 6.

**Sphyrapicus varius.**

(78) P. R. R. Surv., vol. ix, p. 103; (632½) Birds of N. A., 1874, App., p. 521.

**Sphyrapicus varius nuchalis.**

(632½) Birds of N. A., 1874, vol. ii, p. 542, pl. li, figg. 3, 4 (cut, p. 535).

**Sphyrapicus varius ruber.**

(632½) Birds of N. A., 1874, vol. ii, p. 544, pl. li, fig. 6.

**Sphyrapicus varius varius.**

(632½) Birds of N. A., 1874, vol. ii, p. 539, pl. li, figg. 1, 2 (cut, 539).

**Sphyrapicus williamsonii.**

(78) P. R. R. Surv., vol. ix, p. 105; (104) Birds of N. A., 1860, p. 105, pl. xxxiv, fig. 1; (632½) Birds of N. A., 1874, vol. ii, p. 545, pl. li, fig. 5.

**Spizella.**

(632½) Birds of N. A., 1874, vol. ii, p. 1.

**SPIZELLA ATRIGULARIS.**

(78) P. R. R. Surv., vol. ix, p. 476; (87) Mex. Bound. Surv., vol. ii, p. 16, pl. xvii, fig. 1; (104) Birds of N. A., 1860, p. 476, pl. lv, fig. 1; (632½) Birds of N. A., 1874, vol. ii, p. 15, vol. i, pl. xxvi, figg. 11, 12.

**Spizella Breweri.**

(78) P. R. R. Surv., vol. ix, p. 475; (87) Mex. Bound. Surv., vol. ii, p. 16.

**SPIZELLA MONTICOLA.**(78) P. R. R. Surv., vol. ix, p. 472; (632½) Birds of N. A., 1874, vol. ii, p. 3, pl. xxvii, fig. 5 (cuts, pp. 1, 3); *Ibid.*, App., p. 514.**SPIZELLA PALLIDA.**

(78) P. R. R. Surv., vol. ix, p. 474; (87) Mex. Bound. Surv., vol. ii, p. 16; (632½) Birds of N. A., 1874, vol. ii, p. 11, pl. xxvii, fig. 3.

**SPIZELLA PALLIDA BREWERI.**(632½) Birds of N. A., 1874, vol. ii, p. 13, pl. xxvii, fig. 4; *Ibid.*, App., p. 514.**SPIZELLA RUBILLA.**

(78) P. R. R. Surv., vol. ix, p. 473; (632½) Birds of N. A., 1874, vol. ii, p. 5, pl. xxvii, fig. 2.

**SPIZELLA SOCIALIS.**(78) P. R. R. Surv., vol. ix, p. 473; (632½) Birds of N. A., 1874, vol. ii, p. 7, pl. xxvii, fig. 7; *Ibid.*, App., p. 514.**Spizella socialis arizonae.**

(632½) Birds of N. A., 1874, vol. ii, p. 11.

**Spizellinae.**

(632½) Birds of N. A., 1874, vol. i, p. 528.

**Spizinae.**

(632½) Birds of N. A., 1874, vol. ii, p. 54.

**Squatarola helvetica.**

(78) P. R. R. Surv., vol. ix, p. 697.

**Starnænas.**

(632½) Birds of N. A., 1874, vol. iii, p. 394.

**Starnænas cyanocephala.**

(78) P. R. R. Surv., vol. ix, p. 608.

**STARNÆNAS CYANOCEPHALA.**

(632½) Birds of N. A., 1874, vol. iii, p. 395, pl. lviii, fig. 5 (cuts, pp. 395, 396).

**Stelgidopteryx.**

(115) Review of N. A. Birds, May, 1865, Part I, pp. 270, 271, 312; (632½) Birds of N. A., 1874, vol. i, p. 350.

**Stelgidopteryx fulvigula.**

(115) Review of N. A. Birds, May, 1865, Part I, p. 318.

**Stelgidopteryx fulvipennis.**

(115) Review of N. A. Birds, May, 1865, Part I, p. 316.

**Stelgidopteryx ruficollis.**

(115) Review of N. A. Birds, May, 1865, Part I, p. 315.

**STELGIDOPTERYX SERRIPENNIS.**

(78) P. R. R. Surv., vol. ix, p. 313; (115) Review of N. A. Birds, May, 1865, Part I, p. 815; (632½) Birds of N. A., 1874, vol. i, p. 350, pl. xvi, fig. 12 (cut, p. 350).

**Stelgidopteryx uropygialis.**

(115) Review of N. A. Birds, May, 1865, Part I, p. 317.

**Stellula.**

(632½) Birds of N. A., 1874, vol. ii, p. 445.

- Thryophilus sinaloa*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 130.
- Thryophilus striolatus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 131.
- Thryothorus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, pp. 94, 120, 123; (632½) Birds of N. A., 1874, vol. i, p. 141.
- Thryothorus albinucha*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, pp. 125, 149.
- Thryothorus albipectus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.
- THRYOTHORUS BERLANDIERI.**  
(78) P. R. R. Surv., vol. ix, p. 362; (87) Mex. Bound. Surv., vol. ii, p. 13; (104) Birds of N. A., 1860, p. 362, pl. lxxxiii, fig. 1; (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 121, 124.
- Thryothorus Bewickii*.  
(78) P. R. R. Surv., vol. ix, p. 363; (87) Mex. Bound. Surv., vol. ii, p. 13; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.
- THRYOTHORUS BEWICKII BEWICKII.**  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 126; (632½) Birds of N. A., 1874, vol. i, p. 145, pl. ix, figg. 3, 4 (cuts, pp. 142, 145).
- Thryothorus Bewickii leucogaster*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 127; (632½) Birds of N. A., 1874, vol. i, p. 147; *Ibid.*, App., p. 504.
- Thryothorus Bewickii spilurus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 126; (632½) Birds of N. A., 1874, vol. i, p. 147.
- Thryothorus castaneus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.
- Thryothorus fasciato-ventris*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.
- Thryothorus felix*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.
- Thryothorus Galbraithi*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.
- Thryothorus leucogaster*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.
- Thryothorus longirostris*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.
- Thryothorus Ludovicianus*.  
(78) P. R. R. Surv., vol. ix, p. 361; (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 121, 123; (632½) Birds of N. A., 1874, App., p. 503.
- THRYOTHORUS LUDOVICIANUS BERLANDIERI.**  
(632½) Birds of N. A., 1874, vol. i, p. 144, pl. ix, fig. 2.
- THRYOTHORUS LUDOVICIANUS LUDOVICIANUS.**  
(632½) Birds of N. A., 1874, vol. i, p. 142, pl. ix, fig. 1 (cut, p. 141).
- Thryothorus maculipectus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.
- Thryothorus modestus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.
- Thryothorus murinus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.
- Thryothorus nigricapillus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.
- Thryothorus peticus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, pp. 122, 125.
- Thryothorus pleurostictus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, pp. 121, 123.
- Thryothorus polioleura*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.
- Thryothorus rufalbus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.
- Thryothorus rutilus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.
- Thryothorus Schottii*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.
- Thryothorus sinaloa*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.
- Thryothorus spilurus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.
- Tinnunculus sparverius*.  
(78) P. R. R. Surv., vol. ix, p. 13; (94) P. R. R. Surv., vol. x, p. 12; (99) Pr. Acad. Nat. Sci. Phila., 1859 (1860), p. 302.
- Tinnunculus sparverius leasbellinus*.  
(632½) Birds of N. A., 1874, vol. iii, p. 171.
- TINNUNCULUS SPARVERIUS SPARVERIUS.**  
(632½) Birds of N. A., 1874, vol. iii, p. 109 (cuts, pp. 159, 173).
- Toxostoma curvirostris*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 329.
- Toxostoma Lecontei*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 329.
- Toxostoma rediviva*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 328.
- Trichopicus Gairdneri*.  
(78) P. R. R. Surv., vol. ix, p. 91.
- Trichopicus Harrisii*.  
(78) P. R. R. Surv., vol. ix, p. 87.
- Trichopicus pubescens*.  
(78) P. R. R. Surv., vol. ix, p. 89.
- Trichopicus villosus major*.  
(78) P. R. R. Surv., vol. ix, p. 84.
- Trichopicus villosus medius*.  
(78) P. R. R. Surv., vol. ix, p. 84.
- Trichopicus villosus minor*.  
(78) P. R. R. Surv., vol. ix, p. 84.

**Sylviicolinae.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 166, 167; (632½) Birds of N. A., 1874, vol. i, p. 179.

**Sylvilinae.**

- (115) Review of N. A. Birds, July, 1864, Part I, p. 64; *Ibid.*, Aug., 1864, Part I, p. 164; (632½) Birds of N. A., 1874, vol. i, p. 69.

**Sylvinae.**

- (632½) Birds of N. A., 1874, vol. i, p. 69.

**Symphemia semipalmata.**

- (31) Stansbury's Surv. Salt Lake [App. C], p. 320; (78) P. R. R. Surv., vol. ix, p. 729; (94) P. R. R. Surv., vol. x, p. 15.

**Synalibis hamphus antiquus.**

- (78) P. R. R. Surv., vol. ix, p. 916.

**Syrnium.**

- (632½) Birds of N. A., 1874, vol. iii, p. 28.

**SYRNIUM CINEREUM.**

- (78) P. R. R. Surv., vol. ix, p. 56; (632½) Birds of N. A., 1874, vol. iii, p. 30 (cuts, pp. 30, 98, 99, 100, 101, 102).

**SYRNIUM NEBULOSUM.**

- (78) P. R. R. Surv., vol. ix, p. 56; (632½) Birds of N. A., 1874, vol. iii, p. 34 (cuts, pp. 24, 35).

**SYRNIUM OCCIDENTALE.**

- (104) Birds of N. A., 1860, p. 50, pl. lxxvi; (632½) Birds of N. A., 1874, vol. iii, p. 36 (cut, p. 38).

**Tachycineta.**

- (115) Review of N. A. Birds, May, 1865, Part I, pp. 294, 296, 270.

**Tachypetes aquila.**

- (78) P. R. R. Surv., vol. ix, p. 873.

**Tachytrorhis Cooperi.**

- (78) P. R. R. Surv., vol. ix, p. 31.

**Tamagridae.**

- (632½) Birds of N. A., 1874, vol. i, p. 431.

**Tantalus loculator.**

- (78) P. R. R. Surv., vol. ix, p. 682; (87) Mex. Bound. Surv., vol. ii, p. 24.

**Telmatochytes.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 94; *Ibid.*, Oct., 1864, Part I, p. 147; *Ibid.*, Aug., 1864, Part I, p. 163.

**Telmatochytes palustris.**

- (78) P. R. R. Surv., vol. ix, p. 364.

**Teretristes.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 166.

**Teretristia.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 233.

**Teretristis fernandinae.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 234.

**Teretristis Forsteri.**

- (115) Review of N. A. Birds, Apr., 1865, Part I, p. 235.

**TERETRISTIS FORSTERI.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 163, fig. 8.

**Tetrao canadensis.**

- (78) P. R. R. Surv., vol. ix, p. 622.

**Tetrao Franklini.**

- (78) P. R. R. Surv., vol. ix, p. 623.

**Tetrao obscurus.**

- (78) P. R. R. Surv., vol. ix, p. 620; (632½) Birds of N. A., 1874, App., p. 522.

**Tetrao urophasianus.**

- (31) Stansbury's Surv. Salt Lake [App. C], p. 319.

**Tetraonidae.**

- (632½) Birds of N. A., 1874, vol. iii, p. 414.

**Thalassarche chlororhyncha.**

- (78) P. R. R. Surv., vol. ix, p. 822.

**Thalassidroma fregetta.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 335.

**Thalassidroma furcata.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 835; (78) P. R. R. Surv., vol. ix, p. 829.

**Thalassidroma Hornbyi.**

- (78) P. R. R. Surv., vol. ix, p. 829.

**Thalassidroma Leachii.**

- (78) P. R. R. Surv., vol. ix, p. 830.

**THALASSIDROMA MELANIA.**

- (76) P. R. R. Surv., vol. ix, p. 830; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 306; (104) Birds of N. A., 1860, p. 830, pl. xcix, fig. 2.

**Thalassidroma pelagica.**

- (78) P. R. R. Surv., vol. ix, p. 831.

**Thalassidroma Wilsoni.**

- (78) P. R. R. Surv., vol. ix, p. 831.

**Thalassolica tenuirostris.**

- (78) P. R. R. Surv., vol. ix, p. 826.

**Thaumattias.**

- (632½) Birds of N. A., 1874, vol. ii, p. 468.

**Thaumattias linnei.**

- (632½) Birds of N. A., 1874, vol. ii, p. 468.

**Thryomanes.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 94, 126.

**Thryophilus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 94, 127.

**Thryophilus albigularis.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 132.

**Thryophilus castaneus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 133.

**Thryophilus Galbraithi.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 131.

**Thryophilus longirostris.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 131.

**Thryophilus modestus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 131.

**Thryophilus rufalbus poliopterus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 128.

**Thryophilus rufalbus rufalbus.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 128.

**Thryophilus Schottii.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 133.

*Thryophilus sinaloa*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 130.

*Thryophilus striolatus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 131.

*Thryothorus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 94, 120, 123; (632½) Birds of N. A., 1874, vol. i, p. 141.

*Thryothorus albinnucha*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 125, 149.

*Thryothorus albipectus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.

*Thryothorus BERLANDIERI*.

- (78) P. R. R. Surv., vol. ix, p. 363; (87) Mex. Bound. Surv., vol. ii, p. 13; (104) Birds of N. A., 1860, p. 362, pl. lxxxiii, fig. 1; (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 121, 124.

*Thryothorus Bewickii*.

- (78) P. R. R. Surv., vol. ix, p. 363; (87) Mex. Bound. Surv., vol. ii, p. 13; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.

*Thryothorus BEWICKII BEWICKII*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 126; (632½) Birds of N. A., 1874, vol. i, p. 145, pl. ix, figg. 3, 4 (cuts, pp. 142, 145).

*Thryothorus Bewickii leucogaster*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 127; (632½) Birds of N. A., 1874, vol. i, p. 147; *Ibid.*, App., p. 504.

*Thryothorus Bewickii spiliurus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 126; (632½) Birds of N. A., 1874, vol. i, p. 147.

*Thryothorus castaneus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.

*Thryothorus fasciato-ventris*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.

*Thryothorus felix*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.

*Thryothorus Galbraithi*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.

*Thryothorus leucogaster*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.

*Thryothorus longirostris*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.

*Thryothorus Ludovicianus*.

- (78) P. R. R. Surv., vol. ix, p. 361; (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 121, 123; (632½) Birds of N. A., 1874, App., p. 503.

*Thryothorus LUDOVICIANUS BERLANDIERI*.

- (632½) Birds of N. A., 1874, vol. i, p. 144, pl. ix, fig. 2.

*Thryothorus LUDOVICIANUS LUDOVICIANUS*.

- (632½) Birds of N. A., 1874, vol. i, p. 142, pl. ix, fig. 1 (cut, p. 141).

*Thryothorus maculipectus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.

*Thryothorus modestus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.

*Thryothorus murinus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.

*Thryothorus nigricapillus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.

*Thryothorus peniculus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 122, 125.

*Thryothorus pleurostictus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, pp. 121, 123.

*Thryothorus poliopterus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.

*Thryothorus rufalbus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.

*Thryothorus rutilus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 121.

*Thryothorus Schottii*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.

*Thryothorus sinaloa*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.

*Thryothorus spiliurus*.

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 122.

*Tinnunculus sparverius*.

- (78) P. R. R. Surv., vol. ix, p. 13; (94) P. R. R. Surv., vol. x, p. 12; (99) Pr. Acad. Nat. Sci. Phila., 1859 (1860), p. 302.

*Tinnunculus sparverius labellinus*.

- (632½) Birds of N. A., 1874, vol. iii, p. 171.

*TINNUNCULUS SPARVERIUS SPARVERIUS*.

- (632½) Birds of N. A., 1874, vol. iii, p. 169 (cuts, pp. 159, 173).

*Toxostoma curvirostris*.

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Toxostoma Lecontei*.

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Toxostoma rediviva*.

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

*Trichopicus Gairdneri*.

- (78) P. R. R. Surv., vol. ix, p. 91.

*Trichopicus Harrieti*.

- (78) P. R. R. Surv., vol. ix, p. 87.

*Trichopicus pubescens*.

- (78) P. R. R. Surv., vol. ix, p. 89.

*Trichopicus villosus major*.

- (78) P. R. R. Surv., vol. ix, p. 84.

*Trichopicus villosus medius*.

- (78) P. R. R. Surv., vol. ix, p. 84.

*Trichopicus villosus minor*.

- (78) P. R. R. Surv., vol. ix, p. 84.

- Tringa alpina americana*.  
(78) P. R. R. Surv., vol. ix, p. 719.
- Tringa Donapartii*.  
(78) P. R. R. Surv., vol. ix, p. 722.
- Tringa (Tringa) canutus*.  
(78) P. R. R. Surv., vol. ix, p. 715.
- Tringa canutus*.  
(87) Mex. Bound. Surv., vol. ii, p. 25.
- Tringa (Tringa) Cooperi*.  
(76) P. R. R. Surv., vol. ix, p. 716.
- TRINGA COOPERI*.  
(104) Birds of N. A., 1860, p. 716, pl. lxxxix, fig. 1.
- Tringa maculata*.  
(78) P. R. R. Surv., vol. ix, p. 720; (87) Mex. Bound. Surv., vol. ii, p. 25.
- Tringa maritima*.  
(78) P. R. R. Surv., vol. ix, p. 717.
- Tringa subarquata*.  
(78) P. R. R. Surv., vol. ix, p. 718.
- Tringa Wilsoni*.  
(76) P. R. R. Surv., vol. ix, p. 721.
- Tringoides macularia*.  
(78) P. R. R. Surv., vol. ix, p. 735.
- Trochilida*.  
(6324) Birds of N. A., 1874, vol. ii, p. 437.
- Trochilus*.  
(6324) Birds of N. A., 1874, vol. ii, p. 447.
- TROCHILUS ALEXANDRI*.  
(78) P. R. R. Surv., vol. ix, p. 133; (87) Mex. Bound. Surv., vol. ii, p. 6, pl. v, fig. 3; (104) Birds of N. A., 1860, p. 133, pl. xlv, fig. 3; (6324) Birds of N. A., 1874, vol. ii, p. 450, pl. xlvii, fig. 1 (cuta, p. 451).
- TROCHILUS COLUMBUS*.  
(78) P. R. R. Surv., vol. ix, p. 131; (87) Mex. Bound. Surv., vol. ii, p. 6; (6324) Birds of N. A., 1874, vol. ii, p. 448, pl. xlvii, fig. 2 (cuta, p. 447).
- Troglodytes*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, pp. 94, 137, 138; (6324) Birds of N. A., 1874, vol. i, p. 148.
- TROGLODYTES EDON*.  
(78) P. R. R. Surv., vol. ix, p. 367; (115) Review of N. A. Birds, Aug. 1864, Part I, p. 138; (6324) Birds of N. A., 1874, vol. i, p. 149, pl. ix, fig. 5 (cuta, pp. 149, 150).
- Troglodytes edon aztecus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 139.
- Troglodytes edon Parkmanni*.  
(6324) Birds of N. A., 1874, vol. i, p. 53.
- TROGLODYTES ALASCENSIS*.  
(129) Chicago Acad. Sci., 1860, p. 315, pl. xxx, fig. 3.
- Troglodytes albifrons*.  
(32) Stansbury's Surv. Salt Lake (App. C), p. 327.
- Troglodytes albinucha*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 123.
- Troglodytes americanus*.  
(78) P. R. R. Surv., vol. ix, p. 366; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 141.
- Troglodytes brunneicollis*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 144.
- Troglodytes hyemalis*.  
(78) P. R. R. Surv., vol. ix, p. 369; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 144.
- Troglodytes hyemalis pacificus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 145.
- Troglodytes inquietus*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 143.
- Troglodytes intermedius*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 142.
- Troglodytes Parkmanni*.  
(78) P. R. R. Surv., vol. ix, p. 367; (87) Mex. Bound. Surv., vol. ii, p. 13; (115) Review of N. A. Birds, Aug., 1864, Part I, p. 140.
- TROGLODYTES PARVULUS ALASCENSIS*.  
(6324) Birds of N. A., 1874, vol. i, p. 157, pl. ix, fig. 8.
- TROGLODYTES PARVULUS MYEMALIS*.  
(6324) Birds of N. A., 1874, vol. i, p. 155, pl. ix, fig. 9; *Ibid.*, App., p. 504 (cut).
- Troglodytidae*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 91; (6324) Birds of N. A., 1874, vol. i, p. 130.
- TROGON MEXICANUS*.  
(78) P. R. R. Surv., vol. ix, p. 69; (87) Mex. Bound. Surv., vol. ii, p. 5, pl. i, ii; (104) Birds of N. A., 1860, p. 65, pl. xi.
- Trupialis militaris*.  
(78) P. R. R. Surv., vol. ix, p. 533.
- Tryngites rufescens*.  
(78) P. R. R. Surv., vol. ix, p. 739; (104) Birds of N. A., 1860, p. 739, pl. vi.
- Turdidae*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 1; *Ibid.*, Aug. 1864, Part I, pp. 164, 165; (6324) Birds of N. A., 1874, vol. i, p. 1.
- Turdine*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 4; (6324) Birds of N. A., 1874, vol. i, p. 3.
- Turdus*.  
(115) Review of N. A. Birds, June, 1864, Part I, pp. 4, 11, 12; (6324) Birds of N. A., 1874, vol. i, p. 3.
- Turdus (Turdus) Aliciae*.  
(78) P. R. R. Surv., vol. ix, p. 217.
- TURDUS ALICIE*.  
(104) Birds of N. A., 1860, p. 217, pl. lxxxi, fig. 2; (115) Review of N. A. Birds, June, 1864, Part I, p. 21; (6324) Birds of N. A., 1874, vol. i, p. 11, pl. i, fig. 3.
- Turdus assimilis*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 24.
- Turdus Auduboni*, Baird (new specific name) = *Merula aliena*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 16.
- Turdus confinis*.  
(115) Review of N. A. Birds, June, 1864, Part I, p. 29.

*Turdus flavirostris.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 31.

*TURDUS (TURDUS) FUSCESCENS.*

- (78) P. R. R. Surv., vol. ix, p. 214; (115) Review of N. A. Birds, June, 1864, Part I, p. 17; (632½) Birds of N. A., 1874, vol. I, p. 9, pl. i, fig. 5.

*Turdus Grayi.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 26.

*Turdus gymnophthalmus.*

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59.

*TURDUS ILIACUS.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 23; (632½) Birds of N. A., 1874, vol. I, p. 23, pl. ii, fig. 4 (cut, p. 22).

*Turdus infuscatus.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 31.

*Turdus leucauchen.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 24.

*Turdus jamalcensis.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 23.

*Turdus migratorius.*

- (78) P. R. R. Surv., vol. ix, p. 218; (115) Review of N. A. Birds, June, 1864, Part I, p. 28.

*TURDUS MIGRATORIUS CONFINIS.*

- (632½) Birds of N. A., 1874, vol. I, p. 27, pl. ii, fig. 1.

*TURDUS MIGRATORIUS MIGRATORIUS.*

- (632½) Birds of N. A., 1874, vol. I, p. 25, pl. ii, fig. 3 (cuts, pp. 24, 25).

*Turdus (Turdus) mustelinus.*

- (78) P. R. R. Surv., vol. ix, p. 212.

*TURDUS MUSTELINUS.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 13; (632½) Birds of N. A., 1874, vol. I, p. 7, pl. i, fig. 1 (cut, p. 4).

*TURDUS NAEVUS.*

- (78) P. R. R. Surv., vol. ix, p. 219; (115) Review of N. A. Birds, June, 1864, Part I, p. 32; (632½) Birds of N. A., 1874, vol. I, p. 29, pl. ii, fig. 2 (cuts, pp. 28, 29).

*Turdus (Turdus) nanus.*

- (78) P. R. R. Surv., vol. ix, p. 213.

*Turdus nanus.*

- (87) Mex. Bound. Surv., vol. ii, p. 9; (115) Review of N. A. Birds, June, 1864, Part I, p. 15.

*Turdus nigrescens.*

- (115) Review of N. A. Birds, July, 1864, Part I, p. 58.

*Turdus obsoletus.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 28.

*TURDUS PALLASII.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 14; (632½) Birds of N. A., 1874, vol. I, p. 18, pl. i, fig. 6.

*TURDUS PALLASII AUDUBONI.*

- (632½) Birds of N. A., 1874, vol. I, p. 21, pl. i, fig. 21; *Ibid.*, App., p. 499.

*TURDUS PALLASII NANUS.*

- (632½) Birds of N. A., 1874, vol. I, p. 29, pl. i, fig. 7; *Ibid.*, App., p. 499.

*Turdus (Turdus) Pallasii silems.*

- (78) P. R. R. Surv., vol. ix, p. 212.

*Turdus phaeopygus.*

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59.

*Turdus pinicola.*

- (115) Review of N. A. Birds, July, 1864, Part I, p. 58.

*Turdus plebeius.*

- (115) Review of N. A. Birds, July, 1864, Part I, p. 58.

*Turdus ruftorqueus.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 32.

*Turdus rufopalliatas.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

*Turdus (Turdus) Swainsonii.*

- (78) P. R. R. Surv., vol. ix, p. 216.

*TURDUS SWAINSONII.*

- (115) Review of N. A. Birds, June, 1864, Part I, p. 19; (632½) Birds of N. A., 1874, vol. I, p. 14, pl. i, fig. 4.

*TURDUS SWAINSONI USTULATUS.*

- (632½) Birds of N. A., 1874, vol. I, p. 16, pl. i, fig. 2 (cut, p. 5).

*Turdus (Turdus) ustulatus.*

- (78) P. R. R. Surv., vol. ix, p. 215.

*TURDUS USTULATUS.*

- (104) Birds of N. A., 1860, p. 215, pl. lxxxii, fig. 1; (115) Review of N. A. Birds, June, 1864, Part I, p. 18.

*Turdus xanthoscelia.*

- (115) Review of N. A. Birds, July, 1864, Part I, p. 59.

*Tylorhamphus camtschatica.*

- (78) P. R. R. Surv., vol. ix, p. 908.

*Tylorhamphus tetracula.*

- (78) P. R. R. Surv., vol. ix, p. 907.

*Tyrannidae.*

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 165; (632½) Birds of N. A., 1874, vol. II, p. 306.

*Tyrannula cayanaensis.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Tyrannula cinerascens.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Tyrannula flaviventris.*

- (1) Pr. Acad. Nat. Sci. Phila., 1843, p. 263; (3) Amer. Journ. Sci. and Arts, 1846, p. 274; (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Tyrannula Lawrenceii.*

- (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Tyrannula minima.*

- (1) Pr. Acad. Nat. Sci. Phila., 1843, p. 264; (3) Amer. Journ. Sci. and Arts, 1846, p. 275; (32) Stansbury's Surv. Salt Lake [App. C], p. 329.

*Tyrannus.*

- (632½) Birds of N. A., 1874, vol. II, p. 314.



**TYRANNUS CAROLINENSIS.**

- (78) P. R. R. Surv., vol. ix, p. 171; (632½) Birds of N. A., 1874, vol. ii, p. 316, pl. xliii, fig. 4 (cuts pp. 314, 316).

**Tyrannus Cassinii.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

**TYRANNUS COUCHII.**

- (78) P. R. R. Surv., vol. ix, p. 175; (87) Mex. Bound. Surv., vol. ii, p. 8, pl. xi, fig. 1; (104) Birds of N. A., 1860, p. 1875, pl. xlix, fig. 1.

**TYRANNUS DOMINICENSIS.**

- (78) P. R. R. Surv., vol. ix, p. 172; (632½) Birds of N. A., 1874, vol. ii, p. 319, pl. xliii, fig. 8.

**TYRANNUS MELANCHOLICUS.**

- (78) P. R. R. Surv., vol. ix, p. 176; (104) Birds of N. A., 1860, p. 176, pl. xlix, fig. 2.

**TYRANNUS MELANCHOLICUS COUCHI.**

- (632½) Birds of N. A., 1874, vol. ii, p. 329, pl. xliii, fig. 7.

**TYRANNUS VERTICALIS.**

- (78) P. R. R. Surv., vol. ix, p. 173; (632½) Birds of N. A., 1874, vol. ii, p. 324, pl. xliii, fig. 2.

**TYRANNUS VOCIFERANS.**

- (78) P. R. R. Surv., vol. ix, p. 174; (87) Mex. Bound. Surv., vol. ii, p. 8, pl. x; (104) Birds of N. A., 1860, p. 174, pl. xlviii; (632½) Birds of N. A., 1874, vol. ii, p. 327, pl. xliii, fig. 5; (632½) Birds of N. A., 1874, App., p. 518.

**Uria arctica.**

- (78) P. R. R. Surv., vol. ix, p. 915.

**Uria brevirostris.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 323.

**Uria (Uria) carbo.**

- (78) P. R. R. Surv., vol. ix, p. 913.

**URIA CARBO.**

- (104) Birds of N. A., 1860, p. 913, pl. xcvii.

**Uria (Uria) columba.**

- (78) P. R. R. Surv., vol. ix, p. 912.

**URIA COLUMBA.**

- (104) Birds of N. A., 1860, p. 912, pl. xcvi, fig. 4.

**Uria (Uria) grylle.**

- (78) P. R. R. Surv., vol. ix, p. 911.

**URIA GRYLLE.**

- (104) Birds of N. A., 1860, p. 911, pl. xcvi, fig. 2.

**Uria lomvia.**

- (78) P. R. R. Surv., vol. ix, p. 913.

**Uria ringvia.**

- (78) P. R. R. Surv., vol. ix, p. 914.

**Urtile penicillatus.**

- (78) P. R. R. Surv., vol. ix, p. 880.

**Urtile violaceus.**

- (78) P. R. R. Surv., vol. ix, p. 881.

**Utamania torda.**

- (78) P. R. R. Surv., vol. ix, p. 901.

**Vermivora brevipennis.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

**Vermivores.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 166.

**Vireo.**

- (115) Review of N. A. Birds, May, 1866, Part I, pp. 323, 250; (632½) Birds of N. A., 1874, vol. i, pp. 387, 382.

**Vireo altiloquus.**

- (78) P. R. R. Surv., vol. ix, p. 334.

**Vireo atricapilla.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328.

**VIREO ATRICAPILLUS.**

- (78) P. R. R. Surv., vol. ix, p. 337; (87) Mex. Bound. Surv., vol. ii, p. 12; (115) Review of N. A. Birds, May, 1866, Part I, p. 350; (632½) Birds of N. A., 1874, vol. i, p. 383, pl. xvii, fig. 6 (cut, p. 383).

**VIREO BARBATULA.**

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 163, fig. 9.

**VIREO BELLII.**

- (32) Stansbury's Surv. Salt Lake [App. C], p. 328; (78) P. R. R. Surv., vol. ix, p. 337; (87) Mex. Bound. Surv., vol. ii, p. 12; (115) Review of N. A. Birds, May, 1866, Part I, p. 358; (632½) Birds of N. A., 1874, vol. i, p. 389, pl. xvii, fig. 13 (cut, p. 389).

**Vireo Carnioli.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 356.

**VIREO CASSINII.**

- (78) P. R. R. Surv., vol. ix, p. 340; (104) Birds of N. A., 1860, p. 340, pl. lxxviii, fig. 1.

**Vireo crassirostris.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 368.

**Vireo flavifrons.**

- (78) P. R. R. Surv., vol. ix, p. 341.

**Vireo flavoviridis.**

- (78) P. R. R. Surv., vol. ix, p. 332; (87) Mex. Bound. Surv., vol. ii, p. 12.

**Vireo gilvus.**

- (78) P. R. R. Surv., vol. ix, p. 335.

**Vireo Gundlachi.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 369.

**VIREO HUTTONI.**

- (22) Stansbury's Surv. Salt Lake [App. C], p. 328; (78) P. R. R. Surv., vol. ix, p. 339; (87) Mex. Bound. Surv., vol. ii, p. 12; (104) Birds of N. A., 1860, p. 339, pl. lxxviii, fig. 2; (115) Review of N. A. Birds, May, 1866, Part I, p. 367; (632½) Birds of N. A., 1874, vol. i, p. 387, pl. xvii, fig. 12 (cut, p. 387).

**Vireo hypochryseus.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 370.

**Vireo Latimeri.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 364.

**Vireo modestus.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 362.

**VIREO NOVEBORACENSIS.**

- (78) P. R. R. Surv., vol. ix, p. 338; (87) Mex. Bound. Surv., vol. ii, p. 12; (115) Review of N. A. Birds, May, 1866, Part I, p. 354; (632½) Birds of N. A., 1874, vol. i, p. 385; pl. xvii, fig. ii (cuts, p. 382).

**Vireo ochraceus.**

- (115) Review of N. A. Birds, May, 1866, Part I, p. 368.

*Vireo olivaceus.*

- (78) P. R. R. Surv., vol. ix, p. 331; (87) Mex. Bound. Surv., vol. ii, p. 12.

*Vireo pallens.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 365.

*VIREO PHILADELPHICUS.*

- (78) P. R. R. Surv., vol. ix, p. 335; (104) Birds of N. A., 1860, p. 235, pl. lxxviii, fig. 3.

*VIREO PUSILLUS.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 360; (632½) Birds of N. A., 1874, vol. i, p. 391, pl. xvii, fig. 14 (cut, p. 391); (632½) Birds of N. A., 1874, App., p. 507.

*Vireo solitarius.*

- (78) P. R. R. Surv., vol. ix, p. 340.

*VIREO VICINIOR.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 361; (632½) Birds of N. A., 1874, vol. i, p. 393, pl. xvii, fig. 7 (cut, p. 293).

*Vireo virescens.*

- (78) P. R. R. Surv., vol. ix, p. 333.

*Vireolanus.*

- (115) Review of N. A. Birds, May, 1866, Part I, pp. 324, 395.

*Vireolanus chlorogaster.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 390.

*Vireolanus eximius.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 398.

*Vireolanus icterophrys.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 399.

*Vireolanus melitophrys.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 395.

*Vireolanus pulchellus.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 397.

*Vireonella.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 369.

*Vireonidae.*

- (115) Review of N. A. Birds, Aug., 1864, Part I, p. 165; (115) Review of N. A. Birds, May, 1866, Part I, p. 322; (632½) Birds of N. A., 1874, vol. i, p. 357.

*Vireosylvia.*

- (115) Review of N. A. Birds, May, 1866, Part I, pp. 323, 327; (632½) Birds of N. A., 1874, vol. i, p. 358.

*Vireosylvia agilis.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 338.

*Vireosylvia altiloqua.*

- (32) Stanbury's Surv., Salt Lake [App. C], p. 328.

*Vireosylvia altiloqua.*

- (78) P. R. R. Surv., vol. ix, p. 334.

*Vireosylvia barbatula.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 331.

*Vireosylvia chivi.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 337.

*Vireosylvia calidris.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 327.

*VIREOSYLIVIA CALIDRIS BARBATULUS.*

- (632½) Birds of N. A., 1874, vol. i, p. 360, pl. xvii, fig. 1.

*Vireosylvia flavifrons.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 346.

*VIREOSYLIVIA FLAVOVIRIDIS.*

- (78) P. R. R. Surv., vol. ix, p. 332; (115) Review of N. A. Birds, May, 1866, Part I, p. 336; (632½) Birds of N. A., 1874, vol. i, p. 366 (cut, p. 366).

*Vireosylvia gilva.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 342.

*VIREOSYLIVIA GILVUS.*

- (632½) Birds of N. A., 1874, vol. i, p. 368, pl. xvii, fig. 3 (cut, p. 368).

*VIREOSYLIVIA GILVUS SWAINSONI.*

- (632½) Birds of N. A., 1874, vol. i, p. 371 (cut, p. 371.)

*Vireosylvia Josephæ.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 344.

*VIREOSYLIVIA OLIVACEUS.*

- (78) P. R. R. Surv., vol. ix, p. 331; (115) Review of N. A. Birds, May, 1866, Part I, p. 333; (632½) Birds of N. A., 1874, vol. i, p. 363, pl. xvii, fig. 2 (cuts, pp. 358, 363, 364); (632½) Birds of N. A., 1874, App., p. 507.

*VIREOSYLIVIA PHILADELPHICA.*

- (32) Stanbury's Surv. Salt Lake [App. C], p. 328; (115) Review of N. A. Birds, May, 1866, Part I, p. 340; (632½) Birds of N. A., 1874, vol. i, p. 367, pl. xvii, fig. 4 (cut, p. 367).

*Vireosylvia plumbea.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 349.

*Vireosylvia propinqua.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 348.

*Vireosylvia solitaria.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 347.

*Vireosylvia Swainsoni.*

- (115) Review of N. A. Birds, May, 1866, Part I, p. 343.

*Vireosylvia virescens.*

- (78) P. R. R. Surv., vol. ix, p. 333.

*Xanthocephalus.*

- (632½) Birds of N. A., 1874, vol. ii, p. 167.

*XANTHOCEPHALUS ICTEROCEPHALUS.*

- (78) P. R. R. Surv., vol. ix, p. 331; (87) Mex. Bound. Surv., vol. ii, p. 18; (94) P. R. R. Surv., vol. x, p. 13; (632½) Birds of N. A., 1874, vol. ii, p. 167, pl. xxxii, fig. 9, pl. xxxiii, fig. 9 (cuts, pp. 167, 168).

*Xanthornus affinis.*

- (32) Stanbury's Surv. Salt Lake [App. C], p. 331.

**Xanthornus mexicanus.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 331.

**Xanthoura.**

(632½) Birds of N. A., 1874, vol. ii, p. 294.

**XANTHOURA DISCAS LUXUOSA.**

(632½) Birds of N. A., 1874, vol. ii, p. 295, pl. xlii, fig. 1 (cuts, pp. 294, 296).

**Xanthoura luxuosa.**

(78) P. R. R. Surv., vol. ix, p. 589; (87) Mex. Bound. Surv., vol. ii, p. 21.

**Xema sabini.**

(78) P. R. R. Surv., vol. ix, p. 857.

**Xenopicus albolarvatus.**

(78) P. R. R. Surv., vol. ix, p. 96.

**Zenaidura.**

(632½) Birds of N. A., 1874, vol. iii, p. 378.

**ZENAIIDA AMABILIS.**

(78) P. R. R. Surv., vol. ix, p. 62; (632½) Birds of N. A., 1874, vol. iii, p. 379, pl. lviii, fig. 3 (cut, p. 379).

**Zenaidura.**

(632½) Birds of N. A., 1874, vol. iii, p. 374.

**Zenaidura.**

(632½) Birds of N. A., 1874, vol. iii, p. 381.

**ZENAIIDURA CAROLINENSIS.**

(78) P. R. R. Surv., vol. ix, p. 604; (87) Mex. Bound. Surv., vol. ii, p. 21; (632½) Birds of N. A., 1874, vol. iii, p. 383, pl. lviii, fig. 2 (cuts, pp. 382, 383).

**Zonotrichia.**

(632½) Birds of N. A., 1874, vol. i, p. 565.

**ZONOTRICHIA ALBICOLLIS.**

(78) P. R. R. Surv., vol. ix, p. 463; (632½) Birds of N. A., 1874, vol. i, p. 574, pl. xxvi, fig. 10.

**Zonotrichia Casinii.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 330.

**ZONOTRICHIA CORONATA.**

(78) P. R. R. Surv., vol. ix, p. 461; (632½) Birds of N. A., 1874, vol. i, p. 573, pl. xxvi, fig. 1.

**Zonotrichia fallax.**

(56) Pr. Acad. Nat. Sci. Phila., 1854, p. 119.

**ZONOTRICHIA GAMBELII.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 330; (78) P. R. R. Surv., vol. ix, p. 460; (87) Mex. Bound. Surv., vol. ii, p. 15; (104) Birds of N. A., 1860, p. 460, pl. xix, fig. 1.

**ZONOTRICHIA LEUCOPHRYX.**

(78) P. R. R. Surv., vol. ix, p. 458; (87) Mex. Bound. Surv., vol. ii, p. 15; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 304; (104) Birds of N. A., 1860, p. 458, pl. lxix, fig. 2; (632½) Birds of N. A., 1874, vol. i, p. 566, pl. xxv, figs. 9, 10 (cuts, pp. 565, 567).

**ZONOTRICHIA LEUCOPHRYX GAMBELII.**(632½) Birds of N. A., 1874, vol. i, p. 569, pl. xxv, figs. 11, 12; *Ibid.*, App., p. 514.**ZONOTRICHIA QUERULA.**

(32) Stansbury's Surv. Salt Lake [App. C], p. 330; (78) P. R. R. Surv., vol. ix, p. 462; (632½) Birds of N. A., 1874, vol. i, p. 577, pl. xxvi, fig. 47.

## REPTILES.

**ABASTOR ERYTHROGRAMMUS.**

(39) Cat. N. A. Reptiles, 1853, Part I, p. 125; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 93.

**Actis acheta.**

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 59.

**ACTIS CREPITANS.**

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 59; (88) Mex. Bound. Surv., vol. ii, p. 28, pl. xxxvii, figs. 14-17; (96) P. R. R. Surv., vol. x, p. 44.

**Agiastrodon contortrix.** (See *Ancistrodon*.)

(39) Cat. N. A. Reptiles, 1853, Part I, p. 17.

**Alligator lucina.**

(88) Mex. Bound. Surv., vol. ii, p. 5.

**Amblystoma mavortium.**

(85) P. R. R. Surv., vol. x, p. 20.

**AMBLYSTOMA PROSERPINA.**

(38) Pr. Acad. Nat. Sci. Phila., 1852, p. 173. (88) Mex. Bound. Surv., vol. ii, p. 29, pl. xxxv figs. 7-14.

**Amblystoma tenebrosus.**

(37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174.

**AMBLYSTOMA TEXANUM.**

(88) Mex. Bound. Surv., vol. ii, p. 29, pl. xxxv, fig. 15.

**Amblystoma episcopus.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, pp. 284, 285.

**Ambystoma Jeffersoniana.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 283.

**Ambystoma lurida.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 284.

**Ambystoma macrodactyla.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, pp. 283, 292.

**Ambystoma mavortia.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, pp. 284, 292.

**Ambystoma opaca.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 283.

**Ambystoma punctata.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 283.

**Ambystoma tigrina.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 284.

**ANCISTRODON CONTORTRIX.**

(49½) Serpents of N. Y., 1854, pp. 13, 14; (88) Mex. Bound. Surv., vol. ii, p. 15; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 12.

**Anseides lugubria.**

(21) Outlines of Gen. Zoology, 1851, p. 256; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**Anniella pulchra.**

(38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301; (88) Mex. Bound. Surv., vol. ii, p. 13.

**Anolis carolinensis.**

(88) Mex. Bound. Surv., vol. ii, p. 12.

*Anolis Cooperi*.

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 254; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 254.

*ARIZONA ELEGANS*.

- (88) Mex. Bound. Surv., vol. ii, p. 18, pl. xlii; (96) P. R. R. Surv., vol. x, p. 42.

*Aspidonectes Emoryi*.

- (88) Mex. Bound. Surv., vol. ii, p. 3.

*BASCANION CONSTRICTOR*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 98; (49) Serpents of N. Y., 1854, pp. 22, 23; (92) P. R. R. Surv., vol. x, pl. xxxi, fig. 67.

*BASCANION FLAVIVENTRIS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 96; (88) Mex. Bound. Surv., vol. ii, p. 20; (92) P. R. R. Surv., vol. x, pl. xxxi, fig. 70.

*BASCANION FOXII*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 96; (92) P. R. R. Surv., vol. x, pl. xxxi, fig. 69.

*BASCANION FREMONTII*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 95; (92) P. R. R. Surv., vol. x, pl. xxxi, fig. 68.

*BASCANION VESTUSTUS*.

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 97; (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 6.

*Batrachoseps quadridigitata*.

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287.

*BUFO ALVANIUS*.

- (88) Mex. Bound. Surv., vol. ii, p. 26, pl. xli, figg. 1-6.

*BUFO AMERICANUS*.

- (88) Mex. Bound. Surv., vol. ii, p. 25, pl. xxxix, figg. 1-4; (96) P. R. R. Surv., vol. x, p. 44, pl. xxv, fig. 2.

*Bufo borens*.

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174.

*BUFO COGNATUS*.

- (49) Marcy and McClellan's Expl. Red River, La. [App. F.], p. 242, pl. xi; (88) Mex. Bound. Surv., vol. ii, p. 27; (96) P. R. R. Surv., vol. x, p. 44, pl. xxvi.

*Bufo Columbianus*.

- (44) Pr. Acad. Nat. Sci. Phila., 1853, p. 379.

*Bufo debilis*.

- (88) Mex. Bound. Surv., vol. ii, p. 27.

*Bufo granulatus*.

- (36) Pr. Acad. Nat. Sci. Phila., 1852, p. 173.

*BUFO HALOPHILA*.

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301; (88) Mex. Bound. Surv., vol. ii, p. 26, pl. xli, figg. 7-12.

*BUFO INSIDIOR*.

- (88) Mex. Bound. Surv., vol. ii, p. 26, pl. xli, figg. 13-18.

*BUFO NEBULIFER*.

- (88) Mex. Bound. Surv., vol. ii, p. 25, pl. xl, figg. 1-4; (96) P. R. R. Surv., vol. x, p. 44.

*BUFO PUNCTATUS*.

- (36) Pr. Acad. Nat. Sci. Phila., 1852, p. 173; (88) Mex. Bound. Surv., vol. ii, p. 25, pl. xxxix, figg. 5-7.

*BUFO SPECIOSUS*.

- (88) Mex. Bound. Surv., vol. ii, p. 26, pl. xli, figg. 5-10.

*BUFO WOODHOUSII*.

- (88) Mex. Bound. Surv., vol. ii, p. 27; (96) P. R. R. Surv., vol. x, p. 20; (96) P. R. R. Surv., vol. x, p. 44, pl. xxv, fig. 1.

*Calamaria tenuis*.

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p.

*Callisaurus ventralis*.

- (88) Mex. Bound. Surv., vol. ii, p. 8; R. Surv., vol. x, p. 17.

*CELUTA AMEXA*.

- (39) Cat. N. A. Reptiles, 1853, Part (49) Serpents of N. Y., 1854, pp. 2 P. R. R. Surv., vol. x, pl. xxxiii, fig.

*CHLOROSOMA VERNALIS*.

- (39) Cat. N. A. Reptiles, 1853, Part (49) Serpents of N. Y., 1854, pp. 2 P. R. R. Surv., vol. x, pl. xxxii, fig.

*Chorophilus nigrinus*.

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p.

*Chrysemys oregonensis*.

- (88) Mex. Bound. Surv., vol. ii, p. 4.

*Churchillia bellona*.

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. Stansbury's Surv., Salt Lake [A] 350.

*CNEMIDOPHORUS GRACILIS*.

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. Pr. Acad. Nat. Sci. Phila., 1853, p. Mex. Bound. Surv., vol. ii, p. 10, figg. 7-14.

*CNEMIDOPHORUS GRAHAMII*.

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. Mex. Bound. Surv., vol. ii, p. 10, figg. 1-6.

*CNEMIDOPHORUS GULARIS*.

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. Marcy and McClellan's Expl. Re La. [App. F.], 239, pl. x, figg. 1-4; (96) Bound. Surv., vol. ii, p. 11; (96) Surv., vol. x, p. 38.

*Cnemidophorus inornatus*.

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. Mex. Bound. Surv., vol. ii, p. 10; (96) Acad. Nat. Sci. Phila., 1858, p. 255.

*Cnemidophorus marmoratus*.

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p.

*Cnemidophorus octolineatus*.

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. Mex. Bound. Surv., vol. ii, p. 10; (96) Acad. Nat. Sci. Phila., 1858, p. 255.

*Cnemidophorus perplexus*.

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. Mex. Bound. Surv., vol. ii, p. 10.

*Cnemidophorus præsignis*.

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p.

*Cnemidophorus sex-lineatus*.

- (96) P. R. R. Surv., vol. x, p. 38.

*Cnemidophorus tessellatus*.

- (96) P. R. R. Surv., vol. x, p. 18.

*CNEMIDOPHORUS TIGRIS*.

- (27) Pr. Ac

**Coluber moribundus.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 70; (33) Stansbury's Surv. Salt Lake [App. C], p. 851.

**CONTIA MITIS.**

- (28) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 110; (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 7.

**CROTALUS, sp.**

- (92) P. R. R. Surv., vol. x, pl. xxxv, fig. 2; *Ibid.*, fig. 3; *Ibid.*, fig. 5.

**CROTALUS ADAMASTRUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 3; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 2.

**CROTALUS ATROX.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 5; (88) Mex. Bound. Surv., vol. ii, p. 14, pl. i; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 3; (96) P. R. R. Surv., vol. x, p. 39.

**CROTALUS CERASTES.**

- (88) Mex. Bound. Surv., vol. ii, p. 14, pl. iii; (92) P. R. R. Surv., vol. x, pl. xxxv, fig. 4.

**CROTALUS CONFLUENTIS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 8; (49) Marcy and McClellan's Expl. Red River, La. [App. F], p. 217, pl. 1, 3d vol.; (88) Mex. Bound. Surv., vol. ii, p. 14; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 4; (96) P. R. R. Surv., vol. x, p. 40.

**CROTALUS DUMICUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 1; (49) Serpents of N. Y., 1854, pp. 9, 10, 11; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 1; (96) P. R. R. Surv., vol. x, p. 39.

**CROTALUS LUCIFER.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 176; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 6; (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 1.

**CROTALUS MOLOSSUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 10; (88) Mex. Bound. Surv., vol. ii, p. 14, pl. ii; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 5.

**CROTALUS OREGONUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 145; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 6.

**CROTALUS TIGRIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 14, pl. iv; (92) P. R. R. Surv., vol. x, pl. xxxv, fig. 1.

**Crotalophorus concolor.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 12; (88) Mex. Bound. Surv., vol. xii, p. 15; (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 8.

**CROTALOPHORUS EDWARDSII**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 15; (88) Mex. Bound. Surv., vol. ii, p. 15, pl. v, fig. 1; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 10.

**CROTALOPHORUS KIRTLANDII.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 16; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 11 (adult).  
P. R. R. Surv., vol. x, pl. xxv, fig. 11 (young).

**TRIARIUS.**

- 1853, Part I, p. 11; (92) pl. xxiv, fig. 7; (96)

**CROTALOPHORUS TERGERMINUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 14; (49) Serpents of N. Y., 1854, pp. 11, 12, 13; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 9.

**CROTAPHYTUS COLLARIS.**

- (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 235; (88) Mex. Bound. Surv., vol. ii, p. 6; (95) P. R. R. Surv., vol. x, p. 17, pl. xxiv, fig. 1; (96) P. R. R. Surv., vol. x, p. 37.

**Crotaphytus dorsalis.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 126; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**Crotaphytus Gambellii.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 126.

**Crotaphytus reticulatus.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (88) Mex. Bound. Surv., vol. ii, p. 6; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**CROTAPHYTUS WIZLIZENII.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69; (33) Stansbury's Surv. Salt Lake [App. C], p. 340, pl. iii; (88) Mex. Bound. Surv., vol. ii, p. 7, pl. xxxi; (95) P. R. R. Surv., vol. x, p. 17; (96) P. R. R. Surv., vol. x, p. 37.

**Desmognathus.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, 2d ser., p. 282.

**Desmognathus auriculatus.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 285.

**Desmognathus fuscus.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct. 1849, p. 285.

**Desmognathus niger.**

- (10) Journ. Acad. Nat. Sci. Phila., 1849, p. 285.

**DIADOPHIS, sp.**

- (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 2.

**DIADOPHIS AMABILIS.**

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 113; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 83.

**DIADOPHIS DOCILIS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 114; (88) Mex. Bound. Surv., vol. ii, p. 22, pl. xxi, fig. 3; (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 1; *Ibid.*, pl. xxxiii, fig. 84; (96) P. R. R. Surv., vol. x, p. 43.

**Diadophis pulchellus.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 115; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 85.

**Diadophis punctatus.**

- (92) Cat. N. A. Reptiles, 1853, Part I, p. 112; (49) Serpents of N. Y., 1854, pp. 24, 25; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 82.

**Diadophis regalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 115; (88) Mex. Bound. Surv., vol. ii, p. 22; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 86.

**DIPSAS SEPTENTRIONALIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 16, pl. viii, fig. 1; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 18.

**DIPSOSAURUS DORSALIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 8, pl. xxxii, figg. 7-13.

**DIPSOSAURUS MCCALLI.**

- (88) Mex. Bound. Surv., vol. ii, p. 9, pl. xxvii, figg. 4-6.

**Doliosaurus modestus.**

- (88) Mex. Bound. Surv., vol. ii, p. 10; (96) P. R. R. Surv., vol. x, p. 38.

**Doliosaurus platyrhinos.**

- (95) P. R. R. Surv., vol. x, p. 18.

**Elaps fulvius.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 21; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 15.

**ELAPS TENER.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 22; (88) Mex. Bound. Surv., vol. ii, p. 15, pl. vii, fig. 1; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 16.

**Elaps tristia.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 23; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 17.

**Elgaria formosa.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 175.

**Elgaria grandis.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 176.

**Elgaria nobilis.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 128.

**Elgaria principis.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 175.

**Elgaria scincinuda.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69; (33) Stansbury's Surv. Salt Lake [App. C], p. 348, pl. iv, figg. 1-3; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**Emys marmorata.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 176.

**Euphryne.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**EUPHRYNE OBESA.**

- (88) Mex. Bound. Surv., vol. ii, p. 6, pl. xxvii.

**Euphryne obesna.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**EUTANIA DORSALIS.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 2; (96) P. R. R. Surv., vol. x, p. 40.

**EUTANIA FAIREYI.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 20.

**EUTANIA LEPTOCEPHALA.**

- (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 2.

**EUTANIA MARCIANA.**

- (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 221, pl. iii; (88) Mex. Bound. Surv., vol. ii, p. 17; (96) P. R. R. Surv., vol. x, p. 41; (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 26.

**EUTANIA ORDINATA.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 24.

**EUTANIA ORDINOIDES.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 2; (96) P. R. R. Surv., vol. x.

**EUTANIA ORNATA.**

- (88) Mex. Bound. Surv., vol. ii, p. 16, pl. ix; (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 22.

**EUTANIA PICKERINGII.**

- (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 2.

**EUTANIA PROXIMA.**

- (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 220, pl. ii, 3d vol.; (88) Mex. Bound. Surv., vol. ii, p. 16; (96) P. R. R. Surv., vol. x, p. 40; (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 21.

**EUTANIA RADIX.**

- (92) P. R. R. Surv., vol. x, pl. xxxiv, fig. 5; *Ibid.* pl. xxvi, fig. 25.

**EUTANIA SAURITA.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 19.

**Eutania saurita.**

- (49) Serpents of N. Y., 1854, p. 14.

**EUTANIA SIRTALIS.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 22.

**Eutania sirtalis.**

- (49) Serpents of N. Y., 1854, pp. 15, 16.

**EUTANIA VAGRANA.**

- (95) P. R. R. Surv., vol. x, p. 19, pl. xvii; (96) P. R. R. Surv., vol. x, p. 41.

**Eutainia concinna.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 146.

**Eutainia dorsalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 31.

**Eutainia elegans.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 34.

**Eutainia Faireyi.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 25.

**Eutainia infernalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 26.

**Eutainia leptcephala.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 29.

**Eutainia Marciana.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 34.

**Eutainia ordinata.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 32.

**Eutainia ordinoides.**

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 33.

**Eutainia parietalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 28.

**Eutainia Pickeringii.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 27.

**Eutainia proxima.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 26.

**Eutainia radix.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 34.

**Eutainia saurita.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 34.

**Eutainia sirtalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 30.

**Eutainia vagrans.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 35.

**PARANCIA ABACURA.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 150; (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 23.

**GEORGIA COLPERI.**

- (88) Cat. N. A. Reptiles, 1853, Part I, p. 150; (92) P. R. R. Surv., vol. x, pl.

**BOBOIA ORIOLETA.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 158;  
 (88) Mex. Bound. Surv., vol. ii, p. 20, pl. xv  
 (92) P. R. R. Surv., vol. x, pl. xxxi, fig. 66.

**ERRHONOTUS INFERNALIS.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 255;  
 (88) Mex. Bound. Surv., vol. ii, p. 11; (100)  
 Pr. Acad. Nat. Sci. Phila., 1858, p. 255.

**ERRHONOTUS NOBILIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 11, pl. xxv,  
 figg. 1-8.

**ERRHONOTUS OLIVACEUS.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 255;  
 (88) Mex. Bound. Surv., vol. ii, p. 11; (100)  
 Pr. Acad. Nat. Sci. Phila., 1858, p. 225.

**ERRHONOTUS WEBBII.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 255;  
 (88) Mex. Bound. Surv., vol. ii, p. 11, pl.  
 xxiv, figg. 1-10; (100) Pr. Acad. Nat. Sci.  
 Phila., 1858, p. 255.

**GYPPOCHELYS LACERTINA.**

- (88) Mex. Bound. Surv., vol. ii, p. 3.

**HALDEA STRIATULA.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 120;  
 (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 91.

**HELOCETES CLARKII.**

- (88) Mex. Bound. Surv., vol. ii, p. 28, pl. xxxvii,  
 figg. 4-9.

**HELOCETES FERIARUM.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.

**HELOCETES TRISERIATUS.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.  
 (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.

**HELODERMA HORRIDUM.**

- (88) Mex. Bound. Surv., vol. ii, p. 11, pl. xxvi,  
 (96) P. R. R. Surv., vol. x, p. 38.

**HETERODON ATMOKES.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 57; (92)  
 P. R. R. Surv., vol. x, pl. xxviii, fig. 41.

**HETERODON COGNATUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 54; (88)  
 Mex. Bound. Surv., vol. ii, p. 17; (92) P. R.  
 R. Surv., vol. x, pl. xxviii, fig. 39.

**HETERODON NASICUS.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 70; (53)  
 Stansbury's Surv. Salt Lake [App. C], p.  
 352; (39) Cat. N. A. Reptiles, 1853, Part I, p.  
 61; (49) Marcy and McClellan's Expl. Red  
 River La. [App. F], p. 222, pl. iv; (88)  
 Mex. Bound. Surv., vol. ii, p. 18, pl. xi, fig. 1;  
 (92) P. R. R. Surv., vol. x, pl. xxviii, fig. 43;  
 (95) P. R. R. Surv., vol. x, p. 19; (96) P. R.  
 R. Surv., vol. x, p. 41.

**HETERODON NIGER.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 55; (92)  
 P. R. R. Surv., vol. x, pl. xxviii, fig. 40.

**HETERODON PLATYRHINOS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 51; (494)  
 Serpents of N. Y., 1854, pp. 13, 19; (92) P. R.  
 R. Surv., vol. x, pl. xxviii, fig. 38.

**HETERODON SIMUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 59; (92)  
 P. R. R. Surv., vol. x, pl. xxviii, fig. 42.

**HOLBROOKIA AFFINIS.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 125; (88)  
 Mex. Bound. Surv. vol. ii, p. 8.

**Holbrookia approximans.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 253;  
 (88) Mex. Bound. Surv., vol. ii, p. 8; (100)  
 Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**HOLBROOKIA MACULATA.**

- (38) Stansbury's Surv. Salt Lake [App. C], p.  
 342, pl. vi, figg. 1-3; (49) Marcy and McClel-  
 lan's Expl. Red River La. [App. F], p. 236;  
 (88) Mex. Bound. Surv., vol. ii, p. 8; (95) P.  
 R. R. Surv., vol. x, p. 18; (96) P. R. R. Surv.,  
 vol. x, p. 38.

**Holbrookia propinqua.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 126; (88)  
 Mex. Bound. Surv., vol. ii, p. 8.

**HOLBROOKIA TEXANA.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 125; (88)  
 Mex. Bound. Surv., vol. ii, p. 8, pl. xxx; (96)  
 P. R. R. Surv., vol. x, p. 38.

**HYLA AFFINIS.**

- (35) Pr. Acad. Nat. Sci. Phila., 1854, p. 61; (88)  
 Mex. Bound. Surv., vol. ii, p. 29, pl. xxxviii,  
 figg. 4-7.

**Hyla Andersonii.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.

**HYLA EXIMIA.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61; (88)  
 Mex. Bound. Surv., vol. ii, p. 29, pl. xxxviii,  
 figg. 8-10.

**Hyla regilla.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174; (88)  
 Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**Hyla Richardii.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.

**Hyla semifasciata.**

- (88) Mex. Bound. Surv., vol. ii, p. 28.

**HYLA VANVLIETII.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61; (88)  
 Mex. Bound. Surv., vol. ii, p. 29, pl. xxxviii,  
 figg. 1-3.

**LAMPROBOMA EPISCOPUM.**

- (88) Mex. Bound. Surv., vol. ii, p. 22, pl. viii, fig.  
 2.

**LAMPROBOMA OCCIPITALE.**

- (88) Mex. Bound. Surv., vol. ii, p. 21, pl. xxi, fig.  
 1; (92) P. R. R. Surv., vol. x, pl. xxxv, fig.  
 6; (92) P. R. R. Surv., vol. x, pl. xxxv,  
 fig. 7.

**Lepidosternon floridanum.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 255;  
 (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 255.

**LEPTOPHIS GASTIVUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 106;  
 (92) P. R. R. Surv., vol. x, pl. xxxii, fig.  
 79.

**LEPTOPHIS MAJALIS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 107; (49)  
 Marcy and McClellan's Expl. Red River  
 La. [App. F], p. 232, pl. ix; (88) Mex. Bound.  
 Surv., vol. ii, p. 21; (92) P. R. R. Surv., vol.  
 x, pl. xxxii, fig. 80; (96) P. R. R. Surv., vol.  
 x, p. 43.

**Litoria occidentalis.**

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**LODIA TENUIS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 116; (92)  
 P. R. R. Surv., vol. x, pl. xxxvi, fig. 8.

*Lygosoma laterale*.

- (88) Mex. Bound. Surv., vol. ii, p. 13; (96) P. R. R. Surv., vol. x, p. 39; (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 241.

*MASTICOPHIS FLAGELIFORMIS*.

- (92) P. R. R. Surv., vol. x, pl. xxxii, pl. xxxi, fig. 71 (old), fig. 72 (young); (39) Cat. N. A. Reptiles, 1853, Part I, pp. 98, 149.

*Masticophis flavigularis*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 99; (49) Marcy and McClellan's Expl. Red River, La. [App. F], p. 230.

- (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 73 (young).

*MASTICOPHIS MORMON*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 101; (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 74.

*MASTICOPHIS ORNATUS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 102; (88) Mex. Bound. Surv., vol. ii, p. 20, pl. xvii; (96) P. R. R. Surv., vol. x, pl. xxxii, fig. 75.

*MASTICOPHIS SCHOTTII*.

- (88) Mex. Bound. Surv., vol. ii, p. 20, pl. xviii; (39) Cat. N. A. Reptiles, 1853, Part I, p. 100; (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 77.

*MASTICOPHIS TERNIATUS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 103; (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 76; (95) P. R. R. Surv., vol. x, p. 20, pl. xxiii.

*MASTICOPHIS TESTACEUS*.

- (88) Mex. Bound. Surv., vol. ii, p. 20, pl. xvi; (96) P. R. R. Surv., vol. x, p. 43.

*MICROPS LINEATUS*.

- (92) P. R. R. Surv., vol. x, pl. xxxiv, fig. 6.

*Necturus lateralis*.

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 290; (96) P. R. R. Surv., vol. x, p. 45.

*Necturus maculatus*.

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 290.

*Nerodia Agassizii*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 41.

*NERODIA ERYTHROGASTER*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 40; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 28; (95) P. R. R. Surv., vol. x, p. 19, pl. xviii; (96) P. R. R. Surv., vol. x, p. 41.

*NERODIA FASCIATA*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 39; (92) P. R. R. Surv., vol. x, pl. xxxiv, fig. 4.

*NERODIA HOLBROOKII*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 43; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 30.

*NERODIA NIGER*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 147; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 31.

*NERODIA RHOMBIFERA*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 147; (92) P. R. R. Surv., vol. x, pl. xxxiv, fig. 2.

*NERODIA SIFEDON*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 38; (49) Serpents of N. Y., 1854, pp. 16, 17; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 27.

*NERODIA TAXISPILOTA*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 43; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 28.

*NERODIA TRANSVERSA*.

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 41.

- (92) P. R. R. Surv., vol. x, pl. xxx.

*NERODIA WOODHOUSII*.

- (39) Cat. N. A. Reptiles, 1853, Part I, Mex. Bound. Surv., vol. ii, p. 17; R. Surv., vol. x, pl. xxxiv, fig. 3; R. Surv., vol. x, p. 41.

*NINIA DIADEMAT*.

- (39) Cat. N. A. Reptiles, 1853, Part I, P. R. R. Surv., vol. x, pl. xxvii, fig. 1.

*Notophthalmus torosus*.

- (10) Journ. Acad. Nat. Sci. Phila., Oct., Notophthalmus viridescens.

- (10) Journ. Acad. Nat. Sci. Phila., Oct. 284.

*OPHIBOLUS BOYLII*.

- (39) Cat. N. A. Reptiles, 1853, Part I, Mex. Bound. Surv., vol. ii, p. 20; R. Surv., vol. x, pl. xxx, fig. 57.

*OPHIBOLUS CLERICUS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, P. R. R. Surv., vol. x, pl. xxx, fig.

*OPHIBOLUS DOLIATUS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, P. R. R. Surv., vol. x, pl. xxx, fig.

*Ophibolus Evansii*.

- (96) P. R. R. Surv., vol. x, p. 43.

*OPHIBOLUS EXIMIUS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, Serpents of N. Y., 1854, pp. 21, 22; R. Surv., vol. x, pl. xxx, fig. 61.

*OPHIBOLUS GENTILIS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, Marcy and McClellan's Expl. Red River La. [App. F], p. 229, pl. viii; (92) Surv., vol. x, pl. xxx, fig. 64.

*OPHIBOLUS GUTTULUS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, Serpents of N. Y., 1854, pp. 20, 21; R. Surv., vol. x, pl. xxxi, fig. 63.

*OPHIBOLUS RHOMBOMACULATUS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, P. R. R. Surv., vol. x, pl. xxx, fig.

*OPHIBOLUS SATI*.

- (39) Cat. N. A. Reptiles, 1853, Part I, Marcy and McClellan's Expl. Red River La. [App. F], p. 228, pl. vii; (92) Bound. Surv., vol. ii, p. 20; (92) Surv., vol. x, pl. xxx, fig. 59.

*OPHIBOLUS SPLENDIDUS*.

- (39) Cat. N. A. Reptiles, 1853, Part I, Mex. Bound. Surv., vol. ii, p. 21; (92) P. R. R. Surv., vol. x, pl. xx; (96) P. R. R. Surv., vol. x, p. 43.

*OSCEOLA ELAPSOIDEA*.

- (39) Cat. N. A. Reptiles, 1853, Part I, P. R. R. Surv., vol. x, pl. xxxiii, fig.

*Osotheca tristycha*.

- (88) Mex. Bound. Surv., vol. ii, p. 2.

*Phrynosoma cornutum*.

- (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 233; (88) Mex. Surv., vol. ii, p. 9; (96) P. R. R. Surv., vol. x, p. 38; (34) Fr. Acad. Nat. Sci. 1853, p. 261.



**Phrynosoma modestum.**

(27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69.

**Phrynosoma platyrhinos.**

(27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69.

**Phrynosoma REGALE.**

(88) Mex. Bound. Surv., vol. ii, p. 9, pl. xxviii, figg. 1-3.

**PHYLLODACTYLUS TUBERCULOSUS.**

(88) Mex. Bound. Surv., vol. ii, p. 12, pl. xxiii, figg. 1-8.

**Pituophis annectens.**

(38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300;

(29) Cat. N. A. Reptiles, 1853, Part I, p. 72.

**Pituophis bellona.**

(39) Cat. N. A. Reptiles, 1853, Part I, p. 66.

**Pituophis catenifer.**

(39) Cat. N. A. Reptiles, 1853, Part I, p. 69.

**PITUOPHIS MCCLELLANII.**

(39) Cat. N. A. Reptiles, 1853, Part I, p. 68; (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 225, pl. v.

**Pituophis melanoleucus.**

(39) Cat. N. A. Reptiles, 1853, Part I, p. 65.

**Pituophis Wilkesii.**

(39) Cat. N. A. Reptiles, 1853, Part I, p. 71.

**PITOPHIS ANNECTES.**

(92) P. R. R. Surv., vol. x, pl. xxix, fig. 48.

**PITOPHIS BELLONA.**

(88) Mex. Bound. Surv., vol. ii, p. 18; (92) P. R. R. Surv., vol. x, pl. xxix, fig. 46; (95) P. R. R. Surv., vol. x, p. 19; (96) P. R. R. Surv., vol. x, p. 42.

**PITOPHIS CATENIFER.**

(92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 4.

**PITOPHIS MCCLELLANII.**

(92) P. R. R. Surv., vol. x, pl. xxix, fig. 47.

**PITOPHIS MELANOLEUCUS.**

(92) P. R. R. Surv., vol. x, pl. xxix, fig. 44.

**PITOPHIS SATI.**

(92) P. R. R. Surv., vol. x, pl. xxix, fig. 45.

**PITOPHIS WILKESII.**

(92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 5.

**Platythyra flavescens.**

(88) Mex. Bound. Surv., vol. ii, p. 3.

**Plestiodon anthracinus.**

(11) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 294.

**Plestiodon egregius.**

(74) Pr. Acad. Nat. Sci. Phila., 1858, p. 256; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

**Plestiodon fasciatus.**

(96) P. R. R. Surv., vol. x, p. 39.

**Plestiodon guttulatus.**

(88) Mex. Bound. Surv., vol. ii, p. 12; (95) P. R. R. Surv., vol. x, p. 18.

**Plestiodon inornatus.**

(74) Pr. Acad. Nat. Sci. Phila., 1858, p. 256; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

**Plestiodon leptogrammus.**

(74) Pr. Acad. Nat. Sci. Phila., 1858, p. 256; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

**PLESTIODON OBSOLETUM.**

(88) Pr. Acad. Nat. Sci. Phila., 1852, p. 128.

**PLESTIODON OBSOLETUS.**

(88) Mex. Bound. Surv., vol. ii, p. 12, pl. xxv, figg. 9-16; (96) P. R. R. Surv., vol. x, p. 39.

**PLESTIODON SEPTENTRIONALIS.**

(74) Pr. Acad. Nat. Sci. Phila., 1858, p. 256; (95) P. R. R. Surv., vol. x, p. 18, pl. xxiv, fig. 2; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

**PLESTIODON SKINTONIANUM.**

(27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69;

(33) Stansbury's Surv. Salt Lake [App. C] p. 349, pl. iv, figg. 4-6; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301; (95) P. R. R. Surv., vol. x, p. 18.

**Plestiodon tetragrammus.**

(74) Pr. Acad. Nat. Sci. Phila., 1858, p. 256; (88) Mex. Bound. Surv., vol. ii, p. 12; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

**Plethodus erythronota.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 285.

**Pseudotriton montanus.**

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287; (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 283.

**Pseudotriton salmoneus.**

(19) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287.

**Ptychemys mobilensis.**

(88) Mex. Bound. Surv., vol. ii, p. 3.

**RANA ARCOLATA.**

(36) Pr. Acad. Nat. Sci. Phila., 1852, p. 173; (88) Mex. Bound. Surv., vol. ii, p. 28, pl. xxxvi, figg. 11, 12.

**Rana aurora.**

(37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174.

**RANA BERLANDIERI.**

(88) Mex. Bound. Surv., vol. ii, p. 27, pl. xxxvi, figg. 7-10; (96) P. R. R. Surv., vol. x, p. 45.

**Rana boylei.**

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 62.

**Rana cantabrigensis.**

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 62.

**Rana catesbeiana.**

(88) Mex. Bound. Surv., vol. ii, p. 27; (96) P. R. R. Surv., vol. x, p. 45.

**Rana clamitana.**

(96) P. R. R. Surv., vol. x, p. 45.

**Rana draytonii.**

(37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174.

**Rana halecina.**

(96) P. R. R. Surv., vol. x, p. 45.

**Rana lecontei.**

(38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**RANA MONTEZUMAE.**

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61; (88) Mex. Bound. Surv., vol. ii, p. 27, pl. xxxvi, figg. 1-6.

**Rana pipiens.**

(49) Marcy and McClellan's Expl. Red River La. [App. F], p. 243.

**Rana pretiosa.**

(44) Pr. Acad. Nat. Sci. Phila., 1853, p. 378; (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 62.

**Rana septentrionalis.**

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61.

*Rana sinuata.*

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61.

*REGINA CLARKII.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 48; (88) Mex. Bound. Surv., vol. ii, p. 17, pl. x, adult; pl. xi, fig. 2, young; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 35.

*REGINA GRAHAMII.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 47; (88) Mex. Bound. Surv., vol. ii, p. 17, pl. vii, fig. 2; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 34.

*REGINA KIRTLANDII.*

- (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 36.

*REGINA LEBERIS.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 45; (494) Serpents of N. Y., 1854, pp. 17, 18; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 32.

*REGINA RIGIDA.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 46; (92) P. R. R. Surv., vol. x, pl. xxvii, fig. 33.

*RENA DULCIS.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 142; (88) Mex. Bound. Surv., vol. ii, p. 24; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 100.

*Rena humilis.*

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 143.

*RHINOCHILUS LECONTEI.*

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 90; (39) Cat. N. A. Reptiles, 1853, Part I, p. 120; (88) Mex. Bound. Surv., vol. ii, p. 21, pl. xx.

*RHINOSTOMA COCCINEA.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 118; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 89.

*SALVADORA GRAHAMIE.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 104; (88) Mex. Bound. Surv., vol. ii, p. 21, pl. v, fig. 2; (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 78.

*SCAPHIOPUS COUCHII.*

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 62; (88) Mex. Bound. Surv., vol. ii, p. 28, pl. xxxv, figg. 1, 7.

*Sceloporus Clarkii.*

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 127; (88) Mex. Bound. Surv., vol. ii, p. 5.

*SCELOPORUS CONOBROINUS.*

- (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 237, pl. x, figg. 5-12; (88) Mex. Bound. Surv., vol. ii, p. 5; (96) P. R. R. Surv., vol. x, p. 37.

*Sceloporus Couchii.*

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 254; (88) Mex. Bound. Surv., vol. ii, p. 6; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 254.

*Sceloporus dispar.*

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 127.

*Sceloporus floridanus.*

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 254; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 254.

*Sceloporus frontalis.*

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 175.

*Sceloporus gracilis.*

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 175.

*SCELOPORUS GRACIOSUS.*

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. Stansbury's Surv. Salt Lake [4] p. 346, pl. v, figg. 1-3; (95) P. R. R. Surv., vol. x, p. 17.

*Sceloporus longipes.*

- (95) P. R. R. Surv., vol. x, p. 17; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 257; Acad. Nat. Sci. Phila., 1858, p. —.

*Sceloporus marmoratus.*

- (88) Mex. Bound. Surv., vol. ii, p. 6.

*Sceloporus occidentalis.*

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. Pr. Acad. Nat. Sci. Phila., 1853, p. P. R. R. Surv., vol. x, p. 17.

*Sceloporus ornatus.*

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. (88) Mex. Bound. Surv., vol. ii, p. Pr. Acad. Nat. Sci. Phila., 1858, p.

*SCELOPORUS POIKASTIL.*

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. Mex. Bound. Surv., vol. ii, p. 5; figg. 1-3.

*Sceloporus scalaris.*

- (88) Mex. Bound. Surv., vol. ii, p. 6.

*SCELOPORUS SPINOSUS.*

- (88) Mex. Bound. Surv., vol. ii, p. 5, figg. 4-6; (96) P. R. R. Surv., vol. x, p. 37.

*Sceloporus Thayerii.*

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. Mex. Bound. Surv., vol. ii, p. 6; (96) P. R. R. Surv., vol. x, p. 37.

*Sceloporus torquatus.*

- (88) Mex. Bound. Surv., vol. ii, p. 5.

*Sceloporus undulatus.*

- (96) P. R. R. Surv., vol. x, p. 37.

*SCOTOPHIS ALLEGHANENSIS.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. Serpents of N. Y., 1854, pp. 19, 20; (92) P. R. R. Surv., vol. x, pl. xxix, fig. 40; (96) P. R. R. Surv., vol. x, p. 42.

*SCOTOPHIS CONFINE.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. P. R. R. Surv., vol. x, pl. xxx, fig. 5.

*SCOTOPHIS EMORYI.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. (88) Mex. Bound. Surv., vol. ii, p. xii; (92) P. R. R. Surv., vol. x, pl. 56; (96) P. R. R. Surv., vol. x, p. —.

*SCOTOPHIS GUTTATUS.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. (92) P. R. R. Surv., vol. x, pl. xxx.

*SCOTOPHIS LETUS.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. Marcy and McClellan's Expl. R. La. [App. F], p. 227, pl. vi; (92) Surv., vol. x, pl. xxx, fig. 53.

*SCOTOPHIS LINDHEIMERI.*

- (39) Cat. N. A. Reptiles, 1853, Part I, p. (88) Mex. Bound. Surv., vol. ii, p. P. R. R. Surv., vol. x, pl. xix, fig. 1.

*SCOTOPHIS QUADRIVITTATUS.*

- (39) Cat. N. A. Reptiles, 1853, p. (88) P. R. R. Surv., vol. x, p. —.

**SCOTOPHIS VULPINUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 75;  
(92) P. R. R. Surv., vol. x, pl. xxix, fig. 51.

**Siren lacertina.**

- (88) Mex. Bound. Surv., vol. ii, p. 29.

**SIRENIDON LICHENOIDEA.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 68; (83) Stansbury's Surv. Salt Lake [App. C], p. 326, pl. i; (95) P. R. R. Surv., vol. x, p. 20.

**Sirenodon maculatus.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 292.

**SONORA SEMI-ANNULATA.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 117;  
(88) Mex. Bound. Surv., vol. ii, p. 21, pl. xix, fig. 3. (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 88.

**Spelerpes bilineata.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287.

**Spelerpes cirrigera.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287.

**Spelerpes guttolineata.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287.

**Spelerpes longicauda.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287.

**SPHEKODACTYLUS NOTATUS.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. —; (88) Mex. Bound. Surv., vol. ii, p. 12, pl. xxiv, figg. 29-37; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 254.

**SPHEKODACTYLUS VARIEGATUS.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. —; (88) Mex. Bound. Surv., vol. ii, p. 12, pl. xxiii, figg. 9-27, pl. xxiv, figg. 11-19; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 254.

**STORERIA DEKAYI.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 135;  
(49) Serpents of N. Y., 1854, p. 26; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 98.

**STORERIA OCCIPITO-MACULATA.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 137;  
(49) Serpents of N. Y., 1854, pp. 26, 27, 28; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 99.

**TAXIOPHIS IMPERIALIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 23, pl. xix, fig. 1; (92) P. R. R. Surv., vol. xxx, pl. xlii, fig. 87.

**TANTILLA CONONATA.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 131;  
(92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 96.

**Tantilla gracilis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 132;  
(88) Mex. Bound. Surv., vol. ii, p. 23.

**Tapaya brevirostris.**

- (95) P. R. R. Surv., vol. x, p. 18.

**Tapaya Douglassii.**

- (95) P. R. R. Surv., vol. x, p. 18.

**Tapaya Hernandezii.**

- (88) Mex. Bound. Surv., vol. ii, p. 8; (96) P. R. R. Surv., vol. x, p. 38.

**venetianus.**

- Bound. Surv., vol. ii, p. 9; (96) P. R. R. Surv., vol. x, p. 38.

**Taricha laevis.**

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**Thyrosternum sonoriense.**

- (88) Mex. Bound. Surv., vol. ii, p. 3.

**TOLUCA LINEATA.**

- (88) Mex. Bound. Surv., vol. ii, p. 23, pl. xxi, fig. 2; (92) P. R. R. Surv., vol. x, pl. xxxv, fig. 8.

**TOXICOPHIS FISCIVORUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 19; (92) P. R. R. Surv., vol. x, pl. xxx, fig. 13; (96) P. R. R. Surv., vol. x, p. 40.

**TOXICOPHIS PUGNAX.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 20; (88) Mex. Bound. Surv., vol. ii, p. 15, pl. vi.; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 14.

**Trachemys elegans.**

- (88) Mex. Bound. Surv., vol. ii, p. 3.

**Tropidonotus ordinoides.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 176.

**Uma.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**Uma notata.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**Uta graciosa.**

- (88) Mex. Bound. Surv., vol. ii, p. 7.

**Uta ornata.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 126; (88) Pr. Acad. Nat. Sci. Phila., 1853, p. 301; (88) Mex. Bound. Surv., vol. ii, p. 7.

**Uta ornata linearis.**

- (88) Mex. Bound. Surv., vol. ii, p. 7.

**Uta Schottii.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (88) Mex. Bound. Surv., vol. ii, p. 7; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**UTA STANSBURIANA.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69; (33) Stansbury's Surv. Salt Lake [App. C], p. 345, pl. v, figg. 4-6; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301; (88) Mex. Bound. Surv., vol. ii, p. 7; (96) P. R. R. Surv., vol. x, p. 37.

**Uta symmetrica.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (88) Mex. Bound. Surv., vol. ii, p. 7; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**VIRGINIA VALERIA.**

- (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 94;  
(39) Cat. N. A. Reptiles, 1853, Part I, p. 127.

**WENONA.**

- (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 3.

**Wenona Isabella.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 176; (39) Cat. N. A. Reptiles, 1853, Part I, p. 140.

**Wenona plumbea.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 139.

**Xantusia.**

- (74) P. Acad. Nat. Sci. Phila., 1858, p. 255; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 255.

**Xantusia vigilis.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 255; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 255.

**Xerobates Berlandieri.**

- (88) Mex. Bound. Surv., vol. ii, p. 4.

- Vireo olivaceus*.  
(78) P. R. R. Surv., vol. ix, p. 331; (87) Mex. Bound. Surv., vol. ii, p. 12.
- Vireo pallens*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 365.
- VIREO PHILADELPHICUS*.  
(78) P. R. R. Surv., vol. ix, p. 335; (104) Birds of N. A., 1860, p. 335, pl. lxxviii, fig. 3.
- VIREO PUSILLUS*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 360; (632½) Birds of N. A., 1874, vol. i, p. 391, pl. xvii, fig. 14 (cut, p. 391); (632½) Birds of N. A., 1874, App., p. 507.
- Vireo solitarius*.  
(78) P. R. R. Surv., vol. ix, p. 340.
- VIREO VICINIOR*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 361; (632½) Birds of N. A., 1874, vol. i, p. 393, pl. xvii, fig. 7 (cut, p. 293).
- Vireo virescens*.  
(78) P. R. R. Surv., vol. ix, p. 333.
- Vireolanus*.  
(115) Review of N. A. Birds, May, 1866, Part I, pp. 324, 395.
- Vireolanus chlorogaster*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 399.
- Vireolanus eximius*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 398.
- Vireolanus icterophrys*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 399.
- Vireolanus melitophrys*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 395.
- Vireolanus pulchellus*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 397.
- Vireonella*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 369.
- Vireonidae*.  
(115) Review of N. A. Birds, Aug., 1864, Part I, p. 165; (115) Review of N. A. Birds, May, 1866, Part I, p. 322; (632½) Birds of N. A., 1874, vol. i, p. 357.
- Vireosylvia*.  
(115) Review of N. A. Birds, May, 1866, Part I, pp. 323, 327; (632½) Birds of N. A., 1874, vol. i, p. 358.
- Vireosylvia agilis*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 338.
- Vireosylvia altiloqua*.  
(32) Stansbury's Surv., Salt Lake [App. C], p. 328.
- Vireosylvia altiloqua*.  
(78) P. R. R. Surv., vol. ix, p. 334.
- Vireosylvia barbatula*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 331.
- Vireosylvia chivi*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 337.
- Vireosylvia calidris*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 327.
- VIREOSYLVIA CALIDRIS BARBATULUS*.  
(632½) Birds of N. A., 1874, vol. i, p. 360, pl. xvii, fig. 1.
- Vireosylvia flavifrons*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 346.
- VIREOSYLVIA FLAVOVIRIDIS*.  
(78) P. R. R. Surv., vol. ix, p. 332; (115) Review of N. A. Birds, May, 1866, Part I, p. 336; (632½) Birds of N. A., 1874, vol. i, p. 366 (cut, p. 366).
- Vireosylvia gilva*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 342.
- VIREOSYLVIA GILVUS*.  
(632½) Birds of N. A., 1874, vol. i, p. 368, pl. xvii, fig. 3 (cut, p. 368).
- VIREOSYLVIA GILVUS SWAINSONI*.  
(632½) Birds of N. A., 1874, vol. i, p. 371 (cut, p. 371.)
- Vireosylvia Josephine*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 344.
- VIREOSYLVIA OLIVACEUS*.  
(78) P. R. R. Surv., vol. ix, p. 331; (115) Review of N. A. Birds, May, 1866, Part I, p. 333; (632½) Birds of N. A., 1874, vol. i, p. 363, pl. xvii, fig. 2 (cuts, pp. 358, 363, 364); (632½) Birds of N. A., 1874, App., p. 507.
- VIREOSYLVIA PHILADELPHICA*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 328; (115) Review of N. A. Birds, May, 1866, Part I, p. 340; (632½) Birds of N. A., 1874, vol. i, p. 367, pl. xvii, fig. 4 (cut, p. 367).
- Vireosylvia plumbea*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 349.
- Vireosylvia propinqua*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 348.
- Vireosylvia solitaria*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 347.
- Vireosylvia Swainsoni*.  
(115) Review of N. A. Birds, May, 1866, Part I, p. 343.
- Vireosylvia virescens*.  
(78) P. R. R. Surv., vol. ix, p. 333.
- Xanthocephalus*.  
(632½) Birds of N. A., 1874, vol. ii, p. 167.
- XANTHOCEPHALUS ICTHYOCEPHALUS*.  
(78) P. R. R. Surv., vol. ix, p. 331; (87) Mex. Bound. Surv., vol. ii, p. 18; (94) P. R. R. Surv., vol. x, p. 13; (632½) Birds of N. A., 1874, vol. ii, p. 167, pl. xxxii, fig. 9 (cuts, pp. 167, 168).
- Xanthornus affinis*.  
(32) Stansbury's Surv. Salt Lake [App. C], p. 331.

- Xanthornus mexicanus.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 331.
- Xanthoura.**  
(632½) Birds of N. A., 1874, vol. ii, p. 294.
- XANTHOURA INCAS LUXUOSA.**  
(632½) Birds of N. A., 1874, vol. ii, p. 295, pl. xlii, fig. 1 (cuts, pp. 294, 296).
- Xanthoura luxuosa.**  
(78) P. R. R. Surv., vol. ix, p. 589; (87) Mex. Bound. Surv., vol. ii, p. 21.
- Xema sabini.**  
(78) P. R. R. Surv., vol. ix, p. 857.
- Xenopicus albolarvatus.**  
(78) P. R. R. Surv., vol. ix, p. 96.
- Zenaidra.**  
(632½) Birds of N. A., 1874, vol. iii, p. 378.
- ZENAIIDA AMABILIS.**  
(78) P. R. R. Surv., vol. ix, p. 62; (632½) Birds of N. A., 1874, vol. iii, p. 379, pl. lviii, fig. 3 (cut, p. 379).
- Zenaidra.**  
(632½) Birds of N. A., 1874, vol. iii, p. 374.
- ZENAIIDURA.**  
(632½) Birds of N. A., 1874, vol. iii, p. 381.
- ZENAIIDURA CAROLINENSIS.**  
(78) P. R. R. Surv., vol. ix, p. 604; (87) Mex. Bound. Surv., vol. ii, p. 21; (632½) Birds of N. A., 1874, vol. iii, p. 383, pl. lviii, fig. 2 (cuts, pp. 382, 383).
- Zonotrichia.**  
(632½) Birds of N. A., 1874, vol. i, p. 565.

- ZONOTRICHIA ALBICOLLIS.**  
(78) P. R. R. Surv., vol. ix, p. 463; (632½) Birds of N. A., 1874, vol. i, p. 574, pl. xxvi, fig. 10.
- Zonotrichia Cassini.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 330.
- ZONOTRICHIA CORONATA.**  
(78) P. R. R. Surv., vol. ix, p. 461; (632½) Birds of N. A., 1874, vol. i, p. 573, pl. xxvi, fig. 1.
- Zonotrichia fallax.**  
(56) Pr. Acad. Nat. Sci. Phila., 1854, p. 119.
- ZONOTRICHIA GAMBELII.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 330; (78) P. R. R. Surv., vol. ix, p. 460; (87) Mex. Bound. Surv., vol. ii, p. 15; (104) Birds of N. A., 1860, p. 460, pl. xix, fig. 1.
- ZONOTRICHIA LEUCOPHRYX.**  
(78) P. R. R. Surv., vol. ix, p. 458; (87) Mex. Bound. Surv., vol. ii, p. 15; (99) Pr. Acad. Nat. Sci. Phila., 1859, p. 304; (104) Birds of N. A., 1860, p. 458, pl. lxix, fig. 2; (632½) Birds of N. A., 1874, vol. i, p. 566, pl. xxv, figg. 9, 10 (cuts, pp. 565, 567).
- ZONOTRICHIA LEUCOPHRYX GAMBELII.**  
(632½) Birds of N. A., 1874, vol. i, p. 569, pl. xxv, figg. 11, 12; *Ibid.*, App., p. 514.
- ZONOTRICHIA QUERULA.**  
(32) Stansbury's Surv. Salt Lake [App. C], p. 330; (78) P. R. R. Surv., vol. ix, p. 462; (632½) Birds of N. A., 1874, vol. i, p. 577, pl. xxvi, fig. 47.

## REPTILES.

- ABASTOR ERYTHROGRAMMUS.**  
(79) Cat. N. A. Reptiles, 1853, Part I, p. 125;  
(92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 93.
- Acria acheta.**  
(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 59.
- ACRIS CREPITANS.**  
(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 59;  
(88) Mex. Bound. Surv., vol. ii, p. 28, pl. xxxvii, figg. 14-17; (96) P. R. R. Surv., vol. x, p. 44.
- Agiastrodon contortrix.** (See *Ancistrodon*.)  
(39) Cat. N. A. Reptiles, 1853, Part I, p. 17.
- Alligator lucina.**  
(84) Mex. Bound. Surv., vol. ii, p. 5.
- Amblystoma mavortium.**  
(95) P. R. R. Surv., vol. x, p. 20.
- AMBLYSTOMA PROSERPINA.**  
(56) Pr. Acad. Nat. Sci. Phila., 1852, p. 173.  
(84) Mex. Bound. Surv., vol. ii, p. 29, pl. xxxv figg. 7-14.
- Amblystoma tenebrosum.**  
(37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174.
- AMBLYSTOMA TEXANUM.**  
(88) Mex. Bound. Surv., vol. ii, p. 29, pl. xxxv, fig. 15.
- Ambystoma episcopus.**  
(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, pp. 294, 293.
- Ambystoma Jeffersoniana.**  
(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 293.

- Ambystoma lurida.**  
(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 284.
- Ambystoma macrodactyla.**  
(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, pp. 283, 292.
- Ambystoma mavortia.**  
(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, pp. 284, 292.
- Ambystoma opaca.**  
(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 283.
- Ambystoma punctata.**  
(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 283.
- Ambystoma tigrina.**  
(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 284.
- ANCISTRODON CONTORTRIX.**  
(49½) Serpents of N. Y., 1854, pp. 13, 14; (88) Mex. Bound. Surv., vol. ii, p. 15; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 12.
- Anelides lugubris.**  
(21) Outlines of Gen. Zoology, 1831, p. 256; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.
- Anniella pulchra.**  
(38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301; (88) Mex. Bound. Surv., vol. ii, p. 13.
- Anolla carolinensis.**  
(88) Mex. Bound. Surv., vol. ii, p. 12.

- Pomotis chætodon*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (10) 324.
- Pomotis convexifrons*.  
(51) Pr. Acad. Nat. Sci. Phila., 1854, p. 24.
- Pomotis fallax*.  
(51) Pr. Acad. Nat. Sci. Phila., 1854, p. 24.
- Pomotis heros*.  
(51) Pr. Acad. Nat. Sci. Phila., 1854, p. 25.
- Pomotis longulus*.  
(46) Pr. Acad. Nat. Sci. Phila., 1853, p. 391; (50) Marcy and McClellan's Expl. Red River La. [App. F], p. 245, pl. xii.
- Pomotis nefastus*.  
(51) Pr. Acad. Nat. Sci. Phila., 1854, p. 24.
- Pomotis obesus*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (10) 324.
- Pomotis speciosus*.  
(51) Pr. Acad. Nat. Sci. Phila., 1854, p. 24.
- Prionotus pilatus*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (13) 327.
- Rhombus lævis*.  
(1031) Rep. U. S. F. C., V, 1879, p. \*46.
- Rhombus maculatus*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (36) 350.
- Roccus lineatus*.  
Rep. U. S. F. C., II, 1874, pp. xxvii, xlvii.
- Salmo hucho*.  
(628) Rep. U. S. F. C., II, 1874, pp. xix.
- Salmo quinnat*.  
(628) Rep. U. S. F. C., II, 1874, xxiii, lxix; (890) *Ibid.*, III, p. xxxi; (1003) *Ibid.*, IV, 1878, p. 21; (1031) *Ibid.*, V, 1879, p. \*31; (1052) *Ibid.*, VI, 1880, pp. xxv, lv.
- Salmo salar*.  
(628) Rep. U. S. F. C., II, 1874, pp. xii, xviii, xxxix, lxi, lxxi; (890) *Ibid.*, III, p. xxx; (1003) *Ibid.*, IV, 1878, p. 25; (1031) *Ibid.*, V, 1879, p. 36; (1052) *Ibid.*, VI, 1880, pp. xxix, liv.
- Salvelinus fontinalis*.  
(628) Rep. U. S. F. C., II, 1877, p. lxxiii; (1062) *Ibid.*, VI, 1880, p. lii.
- Salvelinus oquasaa*.  
(628) Rep. U. S. F. C., II, 1874, p. lxxiii.
- Salvelinus salvelinus*.  
(628) Rep. U. S. F. C., II, 1874, p. lxxiv.
- Saurus mexicanus*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (32) 346.
- Solea vulgaris*.  
(1031) Rep. U. S. F. C., V, 1879, p. \*46.
- Sphyræna borealis*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (12) 326.
- Syngnathus viridescens*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (37) 351.
- Tautoga americana*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (26) 346.
- Temnodon saltator*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (23) 337.
- Tetraodon turgidus*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (36) 352.
- Thymallus tricolor*.  
(628) Rep. U. S. F. C., II, 1874, p. lxxiv.
- Tinca vulgaris*.  
(1031) Rep. U. S. F. C., V, 1879, p. \*44; (1062) *Ibid.*, VI, 1880, p. xliiv.
- Umbrina alburnus*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (17) 331.
- Zygæna tiburo*.  
(63) Ann. Rep. Smith. Inst., 1854, p. (30) 52.

**Celalder mortoni.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 70; (33) Stansbury's Surv. Salt Lake [App. C], p. 851.

**CONTIA MITIS.**

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 110; (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 7.

**CROTALUS, sp.**

- (92) P. R. R. Surv., vol. x, pl. xxxv, fig. 2; *Ibid.*, fig. 3; *Ibid.*, fig. 5.

**CROTALUS ADAMANTEUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 3; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 2.

**CROTALUS ATROX.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 5; (88) Mex. Bound. Surv., vol. ii, p. 14, pl. 1; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 3; (96) P. R. R. Surv., vol. x, p. 39.

**CROTALUS CERASTES.**

- (88) Mex. Bound. Surv., vol. ii, p. 14, pl. iii; (92) P. R. R. Surv., vol. x, pl. xxxv, fig. 4.

**CROTALUS CONFLUENTIS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 8; (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 217, pl. 1, 3d vol.; (88) Mex. Bound. Surv., vol. ii, p. 14; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 4; (96) P. R. R. Surv., vol. x, p. 40.

**CROTALUS DUMETSI.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 1; (49) Serpents of N. Y., 1854, pp. 9, 10, 11; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 1; (96) P. R. R. Surv., vol. x, p. 39.

**CROTALUS LUCIFER.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 176; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 6; (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 1.

**CROTALUS MOLOSSUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 10; (88) Mex. Bound. Surv., vol. ii, p. 14, pl. ii; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 5.

**CROTALUS OREGONUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 145; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 6.

**CROTALUS TIGRIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 14, pl. iv; (92) P. R. R. Surv., vol. x, pl. xxxv, fig. 1.

**Crotalophorus consors.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 12; (88) Mex. Bound. Surv., vol. xii, p. 15; (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 8.

**CROTALOPHORUS EDWARDSII**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 15; (88) Mex. Bound. Surv., vol. ii, p. 15, pl. v, fig. 1; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 10.

**CROTALOPHORUS KIRTLANDII.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 16; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 11 (adult).

- (92) P. R. R. Surv., vol. x, pl. xxv, fig. 11 (young).

**CROTALOPHORUS MILIARIUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 11; (92) P. R. R. Surv., vol. x, pl. xxiv, fig. 7; (96) P. R. R. Surv., vol. x, p. 40.

**CROTALOPHORUS TERREMINUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 14; (49) Serpents of N. Y., 1854, pp. 11, 12, 13; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 9.

**CROTAPHYTUS COLLARIS.**

- (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 235; (88) Mex. Bound. Surv., vol. ii, p. 6; (95) P. R. R. Surv., vol. x, p. 17, pl. xxiv, fig. 1; (96) P. R. R. Surv., vol. x, p. 37.

**Crotaphytus dorsalis.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 126; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**Crotaphytus Gambelii.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 126.

**Crotaphytus reticulatus.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (88) Mex. Bound. Surv., vol. ii, p. 6; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**CROTAPHYTUS WIZLIZENII.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69; (33) Stansbury's Surv. Salt Lake [App. C], p. 340, pl. iii; (88) Mex. Bound. Surv., vol. ii, p. 7, pl. xxxi; (95) P. R. R. Surv., vol. x, p. 17; (96) P. R. R. Surv., vol. x, p. 37.

**Desmognathus.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, 2d ser., p. 282.

**Desmognathus auriculatus.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 285.

**Desmognathus fuscus.**

- (10) Journ. Acad. Nat. Sci. Phila., Oct. 1849, p. 285.

**Desmognathus niger.**

- (10) Journ. Acad. Nat. Sci. Phila., 1849, p. 285.

**DIADOPHIS, sp.**

- (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 2.

**DIADOPHIS AMABILIS.**

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 300; (39) Cat. N. A. Reptiles, 1853, Part I, p. 113; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 83.

**DIADOPHIS DOCILIS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 114; (88) Mex. Bound. Surv., vol. ii, p. 22, pl. xxi, fig. 3; (92) P. R. R. Surv., vol. x, pl. xxxii, fig. 1; *Ibid.*, pl. xxxiii, fig. 84; (96) P. R. R. Surv., vol. x, p. 43.

**Diadophis pulchellus.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 115; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 85.

**Diadophis punctatus.**

- (92) Cat. N. A. Reptiles, 1853, Part I, p. 112; (49) Serpents of N. Y., 1854, pp. 24, 25; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 82.

**Diadophis regalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 115; (88) Mex. Bound. Surv., vol. ii, p. 22; (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 86.

**DIPSAS SEXTENTRIONALIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 16, pl. viii, fig. 1; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 18.

**DIPSOSAURUS DORSALIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 8, pl. xxxii, figg. 7-13.

**DOLIOSAURUS McCALLI.**

- (88) Mex. Bound. Surv., vol. ii, p. 9, pl. xxvii, figg. 4-6.

**Doliosaurus modestus.**

- (88) Mex. Bound. Surv., vol. ii, p. 10; (96) P. R. R. Surv., vol. x, p. 38.

**Doliosaurus platyrhinos.**

- (95) P. R. R. Surv., vol. x, p. 18.

**Elaps fulvius.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 21; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 15.

**ELAPS TENER.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 22; (88) Mex. Bound. Surv., vol. ii, p. 15, pl. vii, fig. 1; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 16.

**Elaps tristis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 23; (92) P. R. R. Surv., vol. x, pl. xxv, fig. 17.

**Elgaria formosa.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 175.

**Elgaria grandis.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 176.

**Elgaria nobilis.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 128.

**Elgaria principis.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 175.

**Elgaria sciencinuda.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69; (33) Stansbury's Surv. Salt Lake [App. C], p. 348, pl. iv, figg. 1-3; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**Emys marmorata.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 176.

**Euphryne.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**EUPHRYNE OBEA.**

- (88) Mex. Bound. Surv., vol. ii, p. 6, pl. xxvii.

**Euphryne obesus.**

- (74) Pr. Acad. Nat. Sci. Phila., 1858, p. 253; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**EUTAINIA DORSALIS.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 2; (96) P. R. R. Surv., vol. x, p. 40.

**EUTAINIA FAIRYI.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 20.

**EUTAINIA LEPTOCEPHALA.**

- (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 2.

**EUTAINIA MARCIANA.**

- (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 221, pl. iii; (88) Mex. Bound. Surv., vol. ii, p. 17; (96) P. R. R. Surv., vol. x, p. 41; (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 26.

**EUTAINIA ORDINATA.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 24.

**EUTAINIA ORDINOIDES.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 3; (96) P. R. R. Surv., vol. x, p. 42.

**EUTAINIA ORNATA.**

- (88) Mex. Bound. Surv., vol. ii, p. 16, pl. ix; (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 22.

**EUTAINIA PICKERINGII.**

- (92) P. R. R. Surv., vol. x, pl. xxxvi, fig. 2.

**EUTAINIA PROXIMA.**

- (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 220, pl. ii, 3d vol.; (88) Mex. Bound. Surv., vol. ii, p. 16; (96) P. R. R. Surv., vol. x, p. 40; (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 21.

**EUTAINIA RADIX.**

- (92) P. R. R. Surv., vol. x, pl. xxxiv, fig. 5; *Ibid.*, pl. xxvi, fig. 25.

**EUTAINIA SAURITA.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 19.

**Eutainia saurita.**

- (49) Serpents of N. Y., 1854, p. 14.

**EUTAINIA SIRTALIS.**

- (92) P. R. R. Surv., vol. x, pl. xxvi, fig. 22.

**Eutainia sirtalis.**

- (49) Serpents of N. Y., 1854, pp. 15, 16.

**EUTAINIA VAGRANS.**

- (95) P. R. R. Surv., vol. x, p. 19, pl. xvii; (96) P. R. R. Surv., vol. x, p. 41.

**Eutainia concinna.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 166.

**Eutainia dorsalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 21.

**Eutainia elegans.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 24.

**Eutainia Fairyi.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 25.

**Eutainia infernalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 26.

**Eutainia leptocephala.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 29.

**Eutainia Marciana.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 26.

**Eutainia ordinata.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 32.

**Eutainia ordinoides.**

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 306; (96) Cat. N. A. Reptiles, 1853, Part I, p. 23.

**Eutainia parietalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 26.

**Eutainia Pickeringii.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 27.

**Eutainia proxima.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 25.

**Eutainia radix.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 24.

**Eutainia saurita.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 24.

**Eutainia sirtalis.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 26.

**Eutainia vagrans.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 25.

**FARANCIA ABACURA.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 129; (96) P. R. R. Surv., vol. x, pl. xxxiii, fig. 28.

**GEORGIA COLPERI.**

- (96) Cat. N. A. Reptiles, 1853, Part I, p. 129; (96) P. R. R. Surv., vol. x, pl. xxxiii.



**GEORGIA OBOLETA.**

- (38) Cat. N. A. Reptiles, 1853, Part I, p. 158;  
 (88) Mex. Bound. Surv., vol. ii, p. 20, pl. xv  
 (92) P. R. R. Surv., vol. x, pl. xxxi, fig. 66.

**GERRHONOTUS INFERNALIS.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 255;  
 (88) Mex. Bound. Surv., vol. ii, p. 11; (100)  
 Pr. Acad. Nat. Sci. Phila., 1858, p. 255.

**GERRHONOTUS NOBILIS.**

- (88) Mex. Bound. Surv., vol. ii, p. 11, pl. xxv,  
 figg. 1-3.

**Gerrhonotus olivaceus.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 255;  
 (88) Mex. Bound. Surv., vol. ii, p. 11; (100)  
 Pr. Acad. Nat. Sci. Phila., 1858, p. 225.

**GERRHONOTUS WEBBII.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 255;  
 (88) Mex. Bound. Surv., vol. ii, p. 11, pl.  
 xxiv, figg. 1-10; (100) Pr. Acad. Nat. Sci.  
 Phila., 1858, p. 255.

**Gypochelys lacertina.**

- (88) Mex. Bound. Surv., vol. ii, p. 3.

**HALDEA STRIATULA.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 120;  
 (92) P. R. R. Surv., vol. x, pl. xxxiii, fig. 91.

**HELOCETES CLARKII.**

- (88) Mex. Bound. Surv., vol. ii, p. 28, pl. xxxvii,  
 figg. 4-9.

**Heleocetes feriarum.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.

**Heleocetes triseriatus.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.  
 (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.

**HELODERMA HORRIDUM.**

- (88) Mex. Bound. Surv., vol. ii, p. 11, pl. xxvi,  
 (96) P. R. R. Surv., vol. x, p. 38.

**HETERODON ATNODES.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 57; (92)  
 P. R. R. Surv., vol. x, pl. xxviii, fig. 41.

**HETERODON COGNATUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 54; (88)  
 Mex. Bound. Surv., vol. ii, p. 17; (92) P. R.  
 R. Surv., vol. x, pl. xxviii, fig. 39.

**HETERODON FASCIA.**

- (27) Pr. Acad. Nat. Sci. Phila., 1852, p. 70; (53)  
 Stansbury's Surv. Salt Lake [App. C], p.  
 252; (39) Cat. N. A. Reptiles, 1853, Part I, p.  
 61; (49) Marcy and McClellan's Expl. Red  
 River La. [App. F], p. 232, pl. iv; (88)  
 Mex. Bound. Surv., vol. ii, p. 18, pl. xi, fig. 1;  
 (92) P. R. R. Surv., vol. x, pl. xxviii, fig. 43;  
 (95) P. R. R. Surv., vol. x, p. 19; (96) P. R.  
 R. Surv., vol. x, p. 41.

**HETERODON NIGER.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 55; (92)  
 P. R. R. Surv., vol. x, pl. xxviii, fig. 40.

**HETERODON PLATYRHINOS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 51; (494)  
 Serpents of N. Y., 1854, pp. 18, 19; (92) P. R.  
 R. Surv., vol. x, pl. xxviii, fig. 38.

**HETERODON SIMUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 59; (92)  
 P. R. R. Surv., vol. x, pl. xxviii, fig. 42.

**Holbrookia affinis.**

- (88) Pr. Acad. Nat. Sci. Phila., 1852, p. 125; (88)  
 Mex. Bound. Surv. vol. ii, p. 8.

**Holbrookia approximans.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 253;  
 (88) Mex. Bound. Surv., vol. ii, p. 8; (100)  
 Pr. Acad. Nat. Sci. Phila., 1858, p. 253.

**HOLBROOKIA MACULATA.**

- (38) Stansbury's Surv. Salt Lake [App. C], p.  
 342, pl. vi, figg. 1-3; (49) Marcy and McClel-  
 lan's Expl. Red River La. [App. F], p. 236;  
 (88) Mex. Bound. Surv., vol. ii, p. 8; (95) P.  
 R. R. Surv., vol. x, p. 18; (96) P. R. R. Surv.,  
 vol. x, p. 38.

**Holbrookia propinqua.**

- (35) Pr. Acad. Nat. Sci. Phila., 1852, p. 126; (88)  
 Mex. Bound. Surv., vol. ii, p. 8.

**HOLBROOKIA TEXANA.**

- (85) Pr. Acad. Nat. Sci. Phila., 1852, p. 125; (88)  
 Mex. Bound. Surv., vol. ii, p. 8, pl. xxx; (96)  
 P. R. R. Surv., vol. x, p. 38.

**HYLA AFFINIS.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61; (88)  
 Mex. Bound. Surv., vol. ii, p. 29, pl. xxxviii,  
 figg. 4-7.

**Hyla Andersonii.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.

**HYLA EXIMIA.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61; (88)  
 Mex. Bound. Surv., vol. ii, p. 29, pl. xxxviii,  
 figg. 8-10.

**Hyla regilla.**

- (37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174; (88)  
 Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**Hyla Richardii.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 60.

**Hyla semifaciatia.**

- (88) Mex. Bound. Surv., vol. ii, p. 28.

**HYLA VANVLIETII.**

- (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61; (88)  
 Mex. Bound. Surv., vol. ii, p. 29, pl. xxxviii,  
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**LAMPROMOMA EPISCOPUM.**

- (88) Mex. Bound. Surv., vol. ii, p. 22, pl. viii, fig.  
 2.

**LAMPROMOMA OCCIPITALE.**

- (88) Mex. Bound. Surv., vol. ii, p. 21, pl. xxi, fig.  
 1; (92) P. R. R. Surv., vol. x, pl. xxxv, fig.  
 6; (92) P. R. R. Surv., vol. x, pl. xxxv,  
 fig. 7.

**Lepidosternon floridanum.**

- (744) Pr. Acad. Nat. Sci. Phila., 1858, p. 255;  
 (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 255.

**LEPTOPHIS CESTIVUS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 106;  
 (92) P. R. R. Surv., vol. x, pl. xxxii, fig.  
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**LEPTOPHIS MAJALIS.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 107; (49)  
 Marcy and McClellan's Expl. Red River  
 La. [App. F], p. 232, pl. ix; (88) Mex. Bound.  
 Surv., vol. ii, p. 21; (92) P. R. R. Surv., vol.  
 x, pl. xxxii, fig. 80; (96) P. R. R. Surv., vol.  
 x, p. 43.

**Litoria occidentalis.**

- (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

**LODIA TENUI.**

- (39) Cat. N. A. Reptiles, 1853, Part I, p. 116; (92)  
 P. R. R. Surv., vol. x, pl. xxxvi, fig. 8.

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*soma modestum.*

Pr. Acad. Nat. Sci. Phila., 1852, p. 69.

*soma platyrhinos.*

Pr. Acad. Nat. Sci. Phila., 1852, p. 69.

*SOMA REGALE.*

Mex. Bound. Surv., vol. ii, p. 9, pl. xxviii, figg. 1-3.

*ODACTYLUS TUBERCULOSUS.*

Mex. Bound. Surv., vol. ii, p. 12, pl. xxiii, figg. 1-8.

*his annectens.*

Pr. Acad. Nat. Sci. Phila., 1853, p. 300;

(39) Cat. N. A. Reptiles, 1853, Part I, p. 72.

*his bellona.*

Cat. N. A. Reptiles, 1853, Part I, p. 66.

*his catenifer.*

Cat. N. A. Reptiles, 1853, Part I, p. 69.

*PHIS MCCLELLANII.*

Cat. N. A. Reptiles, 1853, Part I, p. 68; (49) Marcy and McClellan's Expl. Red River La. [App. F], p. 225, pl. v.

*his melanoleucus.*

Cat. N. A. Reptiles, 1853, Part I, p. 65.

*his Wilkesii.*

Cat. N. A. Reptiles, 1853, Part I, p. 71.

*PHIS ANNECTENS.*

P. R. R. Surv., vol. x, pl. xxix, fig. 48.

*PHIS BELLONA.*

Mex. Bound. Surv., vol. ii, p. 18; (92) P. R. R. Surv., vol. x, pl. xxix, fig. 46; (95) P. R. R. Surv., vol. x, p. 19; (96) P. R. R. Surv., vol. x, p. 42.

*PHIS CATENIFER.*

P. R. R. Surv., vol. x, pl. xxxvi, fig. 4.

*PHIS MCCLELLANII.*

P. R. R. Surv., vol. x, pl. xxix, fig. 47.

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P. R. R. Surv., vol. x, pl. xxix, fig. 44.

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P. R. R. Surv., vol. x, pl. xxix, fig. 45.

*PHIS WILKESII.*

P. R. R. Surv., vol. x, pl. xxxvi, fig. 5.

*hyra flavescens.*

Mex. Bound. Surv., vol. ii, p. 3.

*odon anthracinus.*

Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 294.

*odon egregius.*

Pr. Acad. Nat. Sci. Phila., 1858, p. 256;

(100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

*odon fasciatus.*

P. R. R. Surv., vol. x, p. 39.

*odon guttulatus.*

Mex. Bound. Surv., vol. ii, p. 12; (95) P. R. R. Surv., vol. x, p. 18.

*odon inornatus.*

Pr. Acad. Nat. Sci. Phila., 1858, p. 256;

(100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

*odon leptogrammus.*

Pr. Acad. Nat. Sci. Phila., 1858, p. 256;

(100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

*odon obsoletum.*

Acad. Nat. Sci. Phila., 1852, p. 128.

*PLESTIODON OBSOLETUS.*

(88) Mex. Bound. Surv., vol. ii, p. 12, pl. xxv, figg. 9-16; (96) P. R. R. Surv., vol. x, p. 39.

*PLESTIODON SEPTENTRIONALIS.*

(74) Pr. Acad. Nat. Sci. Phila., 1858, p. 256;

(95) P. R. R. Surv., vol. x, p. 18, pl. xxiv, fig. 2; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

*PLESTIODON SKILLITORIANUM.*

(27) Pr. Acad. Nat. Sci. Phila., 1852, p. 69;

(32) Stansbury's Surv. Salt Lake [App. C], p. 349, pl. iv, figg. 4-6; (38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301; (95) P. R. R. Surv., vol. x, p. 18.

*Plestiodon tetragrammus.*

(74) Pr. Acad. Nat. Sci. Phila., 1858, p. 256;

(88) Mex. Bound. Surv., vol. ii, p. 12; (100) Pr. Acad. Nat. Sci. Phila., 1858, p. 256.

*Plethodus erythronota.*

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 285.

*Pseudotriton montanus.*

(10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287; (10) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 293.

*Pseudotriton salmoneus.*

(19) Journ. Acad. Nat. Sci. Phila., Oct., 1849, p. 287.

*Ptychemys mobilensis.*

(88) Mex. Bound. Surv., vol. ii, p. 8.

*RANA ARCOLATA.*

(36) Pr. Acad. Nat. Sci. Phila., 1852, p. 173; (88) Mex. Bound. Surv., vol. ii, p. 28, pl. xxxvi, figg. 11, 12.

*Rana aurora.*

(37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174.

*RANA BERLANDIERI.*

(88) Mex. Bound. Surv., vol. ii, p. 27, pl. xxxvi, figg. 7-10; (96) P. R. R. Surv., vol. x, p. 45.

*Rana Boylii.*

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 62.

*Rana cantabrigensis.*

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 62.

*Rana Catesbiana.*

(88) Mex. Bound. Surv., vol. ii, p. 27; (96) P. R. R. Surv., vol. x, p. 45.

*Rana clamitans.*

(96) P. R. R. Surv., vol. x, p. 45.

*Rana Draytonii.*

(37) Pr. Acad. Nat. Sci. Phila., 1852, p. 174.

*Rana halecina.*

(96) P. R. R. Surv., vol. x, p. 45.

*Rana Lecontei.*

(38) Pr. Acad. Nat. Sci. Phila., 1853, p. 301.

*RANA MONTEZUMÆ.*

(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61; (88) Mex. Bound. Surv., vol. ii, p. 27, pl. xxxvi, figg. 1-6.

*Rana pipiens.*

(49) Marcy and McClellan's Expl. Red River La. [App. F], p. 243.

*Rana pretiosa.*

(44) Pr. Acad. Nat. Sci. Phila., 1853, p. 378; (55) Pr. Acad. Nat. Sci. Phila., 1854, p. 62.

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(55) Pr. Acad. Nat. Sci. Phila., 1854, p. 61.

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Department of the Interior:

U. S. NATIONAL MUSEUM.



# BULLETIN

OF THE

UNITED STATES NATIONAL MUSEUM.



No. 21.

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WASHINGTON:  
GOVERNMENT PRINTING OFFICE  
1881.

1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".



**Department of the Interior:**

**U. S. NATIONAL MUSEUM.**

— 24 —

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## ADVERTISEMENT.

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This work is the twenty-fourth of a series of papers intended to illustrate the collections of natural history and ethnology belonging to the United States, and constituting the National Museum, of which the Smithsonian Institution was placed in charge by the act of Congress of August 10, 1876.

It has been prepared at the request of the Institution, and printed by authority of the honorable Secretary of the Interior.

SPENCER F. BAIRD,

*Secretary of the Smithsonian Institution.*

SMITHSONIAN INSTITUTION,

*Washington, December, 1880.*

**NOMENCLATURE**  
**OF**  
**NORTH AMERICAN BIRDS**

**CHIEFLY CONTAINED IN THE**  
**UNITED STATES NATIONAL MUSEUM.**

**BY**  
**ROBERT RIDGWAY.**

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**WASHINGTON:**  
**GOVERNMENT PRINTING OFFICE.**  
**1881.**

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## INTRODUCTION.

---

At the publication, in 1859, of the last Smithsonian catalogue of American birds,\* so many important changes have been made in

the catalogues of North American birds have been issued by the Smithsonian Institution to date, as follows:

Catalogue of North American Birds, chiefly in the Museum of the Smithsonian Institution. By Spencer F. Baird, Assistant Secretary of the Smithsonian Institution. Washington: Smithsonian Institution. October, 1858. 4to, paper. 1 p. l., pp. xvii-leissue, with new title-page, of pp. xvii-lvi of vol. ix, Pacific R. R. Reports of North America"). Includes, besides the list of 738 species, with habitats, of the higher groups, and lists of extralimital species (23 in number) treated in general report, and of others (31) claimed, on apparently insufficient grounds, to be American; also a summary of the number of species given in the works of Bonaparte, and Audubon.]

Catalogue of North American Birds, chiefly in the Museum of the Smithsonian Institution. By Spencer F. Baird. First octavo edition. Washington: Smithsonian Institution. [Smithsonian Miscellaneous Collections, No. 108.] 1859. 8vo. 2 p. ll., pt. 2. [Based upon the quarto list of 1858, but without habitats, and the matter relating to classification, etc. The two additional pages are an alphabetical index of North American genera. As in the quarto list, there are, ostensibly, 738 species, there are 22 interpolations, making a total of 760 names in the list.]

Catalogue of the Birds of North America. By Robert Ridgway. <Proc. U. S. Mus. iii. Aug. 24-Sept. 4, 1880, pp. 163-246. This catalogue is really the basis of the present one, which is essentially a revised edition, very materially modified, however, by numerous alterations and corrections, involving not only the change of a considerable number of names, but also the writing of a new introduction, etc. The title of which has just been quoted *has not been published separately*, although a number of extras were struck off for private use.

More important changes which have been made in the present edition consist, as above, in (1) a new introduction and (2) change of several names, both generic and specific, as follows:

### a. Generic names changed.

7. "Helmitherus" changed to *Helminthotherus*.
- 24-127. "Wilsonia" changed to *Myiodioides*.
10. "Myiodioides" changed to *Myiodynastes*.
- 60-461. "Zenaidura" changed to *Zenaidura*.
162. "Zenaida" changed to *Zenaida*.
- 517-521. "Ægialitis" changed to *Ægialites*.
- 593-600. "Dendrocygna" changed to *Dendrocygna*.
- 517-618. "Aythya" changed to *Æthya*.
755. "Brachyrhamphus" changed to *Brachyrhamphus*.

the nomenclature of the species, and so numerous have been the accessions to the fauna, that the wants of ornithologists require a new list which shall bring the subject fully up to date. It also appears desirable that an analysis should be given of the principal points of variance, numerical and otherwise, between the list which is herewith presented and that which has for so many years been the standard of reference; while in order to further increase the utility of the list, a brief review of the revisions of nomenclature which have been adopted, the species added to the fauna, and other matters of like interest, is given under appropriate headings on pages 59-84.

*b. Specific names changed.*

- No. 5-5 *b*. "*unalashkæ*" changed to *unalasca*.  
 No. 29. "*melanura* Lawr." changed to *californica* Brewst.  
 No. 137. "*caridris*" (a purely typographical error) changed to *calidris*.  
 No. 235 *a*. "*unalashkensis*" changed to *unalascensis*.  
 No. 346. "*yucatanensis* (Cabot) Gould" changed to *corviniventris* Gould.  
 No. 351. "*pelagica*" changed to *pelagica*.  
 No. 377. "*formicivorus* (Sw.) Bp." changed to *formicivorus bairdi* Ridgw.  
 No. 543. "*fedoa*" changed to *fedoa*.  
 No. 698. "*parasiticus* (Linn.) Schaeff." changed to *crepidatus* (Banks) Vieill.  
 No. 699. "*buffoni* (Boie) Coues" changed to *parasiticus* (Linn.) Saunders.  
 No. 724. "*melanai*" changed to *melana*.  
 No. 732. "*cornutus* (Gm.) Kaup" changed to *auritus* (Linn.) Ridgw.  
 No. [733]. "*auritus* (Linn.)" changed to *nigricollis* (Sand.).  
 No. 733 *a*. "*auritus*" changed to *nigricollis*.

*c. Corrections of authorities.*

- No. 77. "(Gmel.) Bp." changed to Salv. & Godm.  
 No. 124. "Bp." changed to Aud.  
 No. 126. "Ridgw." changed to Baird.  
 No. 127. "Coues" changed to Aud.  
 No. 183. "Bp." changed to Coues.  
 No. 230 *a*. "B. B. & R." changed to Ridgw.  
 No. 231. "Forst." changed to Gmel.  
 No. 354. "Bp." and parentheses canceled.  
 No. 406. "Linn." changed to (Linn.) Newt.  
 No. 517. "(Bonap.) Caban." changed to Bonap.  
 No. 594 *a*. "Woodh." changed to Ridgw.  
 No. 644. "Ridgw." changed to Sel. & Salv.  
 No. 733 *a*. "Lawr." changed to Heerm.

*d. English names changed.*

- No. 17. Red-vented Thrasher changed to *Rufous-vented Thrasher*.  
 No. 29. "Black-capped Gnatcatcher" changed to *Black-tailed Gnatcatcher*.  
 No. 133. *Brasier's* Warbler changed to *Brasher's* Warbler.  
 No. 175 *a*. *Gray-headed* Rosy Finch changed to *Hepburn's* Rosy Finch.  
 No. 602. *Black Duck* changed to *Black Mallard*.  
 No. 603. *Florida Black Duck* changed to *Florida Dusky Duck*.  
 No. 626. *Fischer's* Eider changed to *Spectacled Eider*.

Other corrections are chiefly of typographical errors. Those made in the appendix correspond in the main with those of the catalogue, but some important alterations have been made on pages 222, 224, 226, 233, 235, 237, and 238.



The following enumeration contains 226 valid species and recognized races which have either been first described or added to the North American fauna since 1859, while, on the other hand, no less than 42 names of the old catalogue have been relegated to the ranks of synonymy, and 20 more removed as extralimital. Furthermore, of the remaining 698 names over 300 have been more or less emended, so that only 395 of the 760 names as given in the old catalogue are retained in the current nomenclature!

In the present list only those forms which are assumed to be specifically distinct have separate numbers, the subspecies or races being distinguished by a letter of the alphabet (*a, et seq.*, according to the number of subordinate forms) affixed to the species-number. There being 160 names thus subordinated, it therefore follows that the total of this list is 924, an apparent increase of only 164 over the catalogue of 1859, but an actual increase of 226. Briefly summarized, the points of numerical difference between the two lists are as follows:\*

	Catalogue of 1859.	Catalogue of 1881.	Apparent increase.
Ostensible number of names.....	738	764	26
Actual number of names.....	764	924	164
Eliminated from catalogue of 1859.....	<i>Synonyms</i> 42	<i>Extralimital</i> 20	<i>Total</i> 62
New forms given in catalogue of 1881.....	<i>Species</i> 127	<i>Subspecies</i> 99	<i>Total</i> 226
Names of the old catalogue, or their equivalents, retained in the new.....	<i>Species</i> 637	<i>Subspecies</i> 61	<i>Total</i> 698

Names in the old catalogue reduced to the rank of races.....	61
Generic names changed (including subsequent subdivisions of genera).....	100
Specific names changed.....	89
Names of the old catalogue retained in nearly or quite their original form.....	395

The geographical limits assigned to this catalogue include the entire continent of North America down to the southern border of the United States, besides Greenland, the peninsula of Lower California, and the outlying islands of Guadalupe and Socorro, the latter in latitude 18° 35', and about 240 miles off the coast of northwestern Mexico, the former in latitude 29°, and 230 miles southwest from San Diego.† Guadalupe and Socorro, like Lower California, are included for the reason that their zoölogical relationships are much closer to North America, as usually (but arbitrarily) restricted, than to the tropical coast-region of western Mexico, their avian fauna in particular being decidedly of "Nearctic" affinity, with the exception, so far as known, of only two species—a

\* A list of the names which have been changed is given on pages 69-74.

† The longitude of Guadalupe is 118° 20' W., the distance from the nearest point on mainland being between 90 and 100 miles.

*Polyborus* peculiar to Guadalupe and a *Conurus* found both in Socorro and in western Mexico. Indeed, the greater part of Mexico itself (all, in fact, except the narrow coast-region, or *tierra caliente*, and the lowlands of the southern portion) belongs, ornithologically as well as geographically, to North America, as might easily be demonstrated did space permit; but the enlargement of our field to its proper limits would be quite impracticable at the present time. For the surrender of this our rightful territory, however, we have compensation in the fact that the arbitrary line which we have drawn (*i. e.*, the United States and Mexican boundary from the Gulf of Mexico to the mouth of the Colorado) gives a comparative stability to the list which a greater southward extension of the area, with indefinite limits, would render impossible. After having thus defined the southern limits of our field, however, we are constrained, by important and carefully considered circumstances, to retain in the list some seven or eight species of Mexican birds treated by Professor Baird in volume ix, *Pacific Railroad Reports* ("Birds of North America"), and included in the catalogue of 1859. They were all obtained just across the Rio Grande, and therefore it may be deemed perfectly safe to assume that their occasional occurrence on our side of the river is certain, and their capture there merely a question of time. Ten species published by J. P. Giraud\* as having been obtained in Texas, but which have not been subsequently recorded from within our limits, are also included, there being every probability of their occurrence there, while Mr. Giraud strenuously maintained, to the day of his death, that they were really collected in that State. Neither are we prepared to relinquish certain Audubonian species which at present are known only from the works of their describer (*e. g.*, *Regulus curieri*, *Perissoglossa* [?] *auribonata*, *Dendroica* [?] *montana*, and *Myiodiocetes* [?] *minutus*), as well as two well known species given by Audubon on his own authority (*Chrysomitris* "*magellanica*" = *C. notata*, and *Eudocimus ruber*), having full confidence, as we do, in his veracity.†

---

A Description of Sixteen New Species of North American Birds. By Jacob P. Giraud, Jr. New York, George F. Nesbitt printer, Tontine Building, corner of Wall and Water streets. 1844. Folio. Not paged, 8 plates. [For species given in this work which have not since been obtained within the limits of the United States, see p. 10.]

In several instances where Audubon received his specimens and the particular names to them at second hand he was evidently imposed upon—"Carduelis stanleyi" (= *Carduelis barbata*), *C. yarrelli*, and *Trochilus mango* (= *Lampornis violicauda*), all well known South American birds, being cases in point. But the birds which we have called special attention to above are all so clearly described and accurately figured either regard them as valid species or, as the only alternative, view

The adoption of trinomials for the designation of nascent species—a direct result of the synthetic method of study which has supplanted the former analytic treatment of the subject—has caused perhaps the greatest difficulty encountered in the compilation of this catalogue, it being in many cases very difficult to decide whether a given form should be treated as having passed the “varietal stage”, and therefore to be designated by a binomial, or whether it is yet incompletely differentiated, and to be subordinated in rank by a trinomial appellation.\*

The greatest care has been taken, however, in all doubtful cases of this kind, and previous conclusions (published in “History of North American Birds”† and elsewhere) carefully reconsidered, with the aid of all the material accessible, including many specimens not previously in hand. This reconsideration of the subject has, in not a few cases, resulted in a reversal of former opinion, specimens from important localities not before represented often deciding the point one way or the other. Every form whose characteristics bear unmistakably the im-

them as merely the creation of Audubon’s brain and pencil. To do the latter, however, on the purely negative ground that no one else has met with them, seems to us not only a gross injustice to his memory, but, laying aside personal considerations altogether, also a most insecure position to take. The type of *Emberiza* [*Spiza*] *townsendi*, described by Audubon forty-six years ago, remains unique to this day; but since it fortunately exists in an excellent state of preservation, we have, in this case at least, positive evidence of Audubon’s good faith. The species may now be extinct, and so may “Cuvier’s Kinglet”, the “Carbonated” and “Blue Mountain” Warblers, and the “Small-headed Flycatcher”; but we have very strong faith that these “lost” species will eventually repeat the history of several others which for a long time evaded the closest search, like *Coturniculus lecontei* (Aud.), the type specimen of which was lost, and a second example not obtained until 1869, or twenty-six years after the species was first described and figured, while now it is represented by a greater or less number of specimens in all the principal collections in this country; or *Centronyx bairdi* (Aud.), which passed through even a worse experience, an eminent ornithologist having the good fortune to obtain more than 75 of this species in less than a year after he had “ventured to foretell” that “a second specimen would never be found”! A case among plants is equally suggestive. We refer to the yellow water-lily (*Nymphaea flexilis*, Leitn.), figured for the first time on one of Audubon’s bird-plates. Though a conspicuous and easily recognized species, it remained otherwise unknown to botanists, and even snubbed by some, until within a very few years past, when it was rediscovered in Florida (its original station) by the well-known lady botanist Mrs. Mary Treat, who published her discovery; and thus effectually vindicated the great naturalist, in Harper’s Magazine (vol. v, p. 365).

\*It should not be inferred from our remarks in this connection that we find the use of trinomials inconvenient in practical application. On the contrary, no other method seems at all adequate to the proper discrimination between isolated and intergrading forms; and the difficulty in the cases above alluded to arises wholly from the want of sufficient material to decide the question of intergradation or the contrary.

†History of North American Birds. By S. F. Baird, T. M. Brewer, and R. Ridgway. Land Birds. Illustrated by 64 colored plates and 593 woodcuts. 3 vols., royal 8vo. Boston, Little, Brown, & Co. 1874.

press of climatic or local influences, gradually less marked toward the limits of another form, with which it thus intergrades, and all forms which certainly intergrade, no matter how widely distinct the opposite extremes may appear (e. g., *Colaptes auratus*, and *C. mexicanus*, and the different races of *Passerella*), together with intergrading forms whose peculiarities are not explained by any known "law" of variation, have been reduced to subspecific rank. On the other hand, where the difference between allied forms is slight, but at the same time apparently constant, and not necessarily coincident with a difference of habitat (e. g., certain of the small Thrushes and the various forms of *Junco*), specific rank is upheld. There are some forms which future investigation, based upon adequate material, may decide to be of different rank from that accorded them here. We cheerfully acknowledge our fallibility, but at the same time would say that we have endeavored to be as consistent as possible, giving the rank of each form as it appears in the light of our present knowledge, independent of previous conclusions.

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## ADVERTISEMENT.

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This work is the twenty-fourth of a series of papers intended to illustrate the collections of natural history and ethnology belonging to the United States, and constituting the National Museum, of which the Smithsonian Institution was placed in charge by the act of Congress of August 10, 1876.

It has been prepared at the request of the Institution, and printed by authority of the honorable Secretary of the Interior.

SPENCER F. BAIRD,

*Secretary of the Smithsonian Institution.*

SMITHSONIAN INSTITUTION,

*Washington, December, 1880.*

**NOMENCLATURE**  
**OF**  
**NORTH AMERICAN BIRDS**

**CHIEFLY CONTAINED IN THE**  
**UNITED STATES NATIONAL MUSEUM.**

**BY**  
**ROBERT RIDGWAY.**

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**WASHINGTON:**  
**GOVERNMENT PRINTING OFFICE.**  
**1881.**

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- 193a. **PASSERCULUS SANDWICHENSIS SAVANNA** (WILS.) RIDGW.  
Savannah Sparrow. [332.]
- 193b. **PASSERCULUS SANDWICHENSIS ALAUDINUS** (BP.) RIDGW.  
Western Savannah Sparrow. [335.]
194. **PASSERCULUS ANTHINUS** BONAP.  
Titlark Sparrow. [334.]
195. **PASSERCULUS GUTTATUS** LAWR.  
Saint Lucas Sparrow.
196. **PASSERCULUS ROSTRATUS** (CASS.) BAIRD.  
Large-billed Sparrow. [336.]
197. **POECETES GRAMINEUS** (GM.) BAIRD.  
Grass Finch. [337.]
- 197a. **POECETES GRAMINEUS CONFINIS** BAIRD.  
Western Grass Finch.
198. **COTURNICULUS PASSERINUS** (WILS.) BP.  
Yellow-winged Sparrow. [338.]
- 198a. **COTURNICULUS PASSERINUS PERPALLIDUS** RIDGW.  
Western Yellow-winged Sparrow.
199. **COTURNICULUS HENSLOWI** (AUD.) BP.  
Henslow's Sparrow. [339.]
200. **COTURNICULUS LECONTEI** (AUD.) BP.  
Leconte's Sparrow. [340.]
201. **AMMODROMUS CAUDACUTUS** (GM.) SWAINS.  
Sharp-tailed Finch. [341.]
- 201a. **AMMODROMUS CAUDACUTUS NELSONI** ALLEN.  
Nelson's Sharp-tailed Finch.
202. **AMMODROMUS MARITIMUS** (WILS.) SWAINS.  
Sea-side Finch. [342.]
203. **AMMODROMUS NIGRESCENS** RIDGW.  
Black-and-white Sea-side Finch.
204. **CHONDESTES GRAMMICA** (SAY) BP.  
Lark Finch. [344.]

- 204a. **CHONDESTES GRAMMICA STRIGATA** (Sw.) RIDGW.  
Western Lark Finch.
205. **ZONOTRICHIA QUERULA** (NUTT.) GAMB.  
Harris's Sparrow. [348.]
206. **ZONOTRICHIA LEUCOPHYRS** (FORST.) SWAINS.  
White-crowned Sparrow. [345.]
207. **ZONOTRICHIA GAMBELI** (NUTT.) GAMB.  
Gambel's White-crowned Sparrow.
- 207a. **ZONOTRICHIA GAMBELI INTERMEDIA** RIDGW.  
Intermediate White-crowned Sparrow. [346.]
208. **ZONOTRICHIA CORONATA** (PALL.) BAIRD.  
Golden-crowned Sparrow. [347.]
209. **ZONOTRICHIA ALBICOLLIS** (GM.) BP.  
White-throated Sparrow. [349.]
210. **SPIZELLA MONTANA** (FORST.) RIDGW.  
Tree Sparrow. [357.]
211. **SPIZELLA DOMESTICA** (BARTR.) COUES.  
Chipping Sparrow. [359.]
- 211a. **SPIZELLA DOMESTICA ARIZONÆ** (COUES) RIDGW.  
Western Chipping Sparrow.
212. **SPIZELLA PALLIDA** (Sw.) BP.  
Clay-colored Sparrow. [360.]
213. **SPIZELLA BREWERI** CASS.  
Brewer's Sparrow. [361.]
214. **SPIZELLA PUSILLA** (WILS.) BP.  
Field Sparrow. [358.]
215. **SPIZELLA ATRIGULARIS** (CABAN.) BD.  
Black-chinned Sparrow. [362.]
216. **JUNCO AIKENI** RIDGW.  
White-winged Snowbird.
217. **JUNCO HYEMALIS** (LINN.) SCL.  
Black Snowbird. [354.]
218. **JUNCO OREGONUS** (TOWNS.) SCL.  
Oregon Snowbird. [352.]
219. **JUNCO ANNECTENS** BAIRD.  
Pink-sided Snowbird.
220. **JUNCO CANICEPS** (WOODH.) BAIRD.  
Gray-headed Snowbird. [353.]
221. **JUNCO DORSALIS**

222. *JUNCO CINEREUS* (SWAINS.) CABAN.  
Mexican Snowbird. [350.]
223. *JUNCO INSULARIS* RIDGW.  
Guadalupe Snowbird.
224. *AMPHISPIZA BILINEATA* (CASS.) COUES.  
Black-throated Sparrow. [355.]
225. *AMPHISPIZA BELLI* (CASS.) COUES.  
Bell's Sparrow. [356.]
- 225a. *AMPHISPIZA BELLI NEVADENSIS* RIDGW.  
Sagebrush Sparrow.
226. *PEUCÆA ÆSTIVALIS* (LIGHT.) CABAN.  
Bachman's Finch. [370.]
- 226a. *PEUCÆA ÆSTIVALIS ILLINOENSIS* RIDGW.  
Oak-woods Sparrow.
227. *PEUCÆA ARIZONÆ* RIDGW.  
Arizona Sparrow.
228. *PEUCÆA CASSINI* (WOODH.) BAIRD.  
Cassin's Sparrow. [371.]
229. *PEUCÆA CARPALIS* COUES.  
Rufous-winged Sparrow.
230. *PEUCÆA RUFICEPS* (CASS.) BAIRD.  
Rufous-crowned Sparrow. [372.]
- 230a. *PEUCÆA RUFICEPS BOUCARDI* (SOL.) RIDGW.  
Boucard's Sparrow.
231. *MELOSPIZA FASCIATA* (GMEL.) SCOTT.  
Song Sparrow. [363.]
- 231a. *MELOSPIZA FASCIATA FALLAX* BAIRD.  
Mountain Song Sparrow. [367.]
- 231b. *MELOSPIZA FASCIATA HEERMANNI* BAIRD.  
Heermann's Song Sparrow. [364.]
- 231c. *MELOSPIZA FASCIATA SAMUELIS* BAIRD.  
Californian Song Sparrow. [343, 365.]
- 231d. *MELOSPIZA FASCIATA GUTTATA* (NUTT.) BAIRD.  
Rusty Song Sparrow. [366.]
- 231e. *MELOSPIZA FASCIATA RUFINA* (BRANDT) BAIRD.  
Sooty Song Sparrow.
232. *MELOSPIZA CINEREA* (GM.) RIDGW.  
Aleutian Song Sparrow.
233. *MELOSPIZA PALUSTRIS* (WILS.) BAIRD.  
Swamp Sparrow. [369.]

234. **MELOSPIZA LINCOLNI** (AUD.) BAIRD.  
Lincoln's Finch. [368.]
235. **PASSERELLA ILIACA** (MERREM) SW.  
Fox-colored Sparrow. [374.]
- 235 a. **PASSERELLA ILIACA UNALASCENSIS** (GM.) RIDGW.  
Townsend's Sparrow. [375.]
- 235 b. **PASSERELLA ILIACA MEGARHYNCHA** (BAIRD) RIDGW.  
Thick-billed Sparrow. [376 a.]
- 235 c. **PASSERELLA ILIACA SCHISTACEA** (BAIRD) ALLEN.  
Slate-colored Sparrow. [376.]
236. **EMBERNAGRA RUFIIVIRGATA** LAWR.  
Texas Sparrow. [373.]
237. **PIPILO ERYTHROPHthalmus** (LINN.) VIEILL.  
Chewink; Towhee. [391.]
- 237 a. **PIPILO ERYTHROPHthalmus ALLENI** COUES.  
Florida Towhee.
238. **PIPILO MACULATUS ARCTICUS** (SWAINSON) COUES.  
Northern Towhee. [393.]
- 238 a. **PIPILO MACULATUS MEGALONYX** (BAIRD) COUES.  
Spurred Towhee. [394.]
- 238 b. **PIPILO MACULATUS OREGONUS** (BELL) COUES.  
Oregon Towhee. [392.]
- 238 c. **PIPILO MACULATUS CONSOBRINUS** RIDGW.  
Guadalupe Towhee.
- 238 d. **PIPILO MACULATUS CARMANI** BAIRD.  
Socorro Towhee.
239. **PIPILO CHLORURUS** (TOWNS.) BAIRD.  
Green-tailed Towhee. [398.]
240. **PIPILO FUSCUS MESOLEUCUS** (BAIRD) RIDGW.  
Cañon Towhee. [397.]
- 240 a. **PIPILO FUSCUS ALBIGULA** (BAIRD) COUES.  
Saint Lucas Brown Towhee.
- 240 b. **PIPILO FUSCUS CRISSALIS** (VIG.) COUES.  
Californian Brown Towhee. [396.]
241. **PIPILO ABERTI** BAIRD.  
Abert's Towhee. [395.]
242. **CARDINALIS VIRGINIANUS** (BRISS.) BP.  
Cardinal Grosbeak. [390.]
- 242 a. **CARDINALIS VIRGINIANUS IGNEUS** (BAIRD) COUES.  
Saint Lucas Cardinal.

- PYRRHULOXIA SINUATA** BONAP.  
Texan Cardinal. [389.]
- ZAMELODIA LUDOVICIANA** (LINN.) COUES.  
Rose-breasted Grosbeak. [380.]
- ZAMELODIA MELANOCEPHALA** (SWAINS.) COUES.  
Black-headed Grosbeak. [381.]
- GUIRACA CÆRULEA** (LINN.) SWAINS.  
Blue Grosbeak. [382.]
- PASSERINA PARELLINA** (BP.) RIDGW.  
Blue Bunting. [383.]
- PASSERINA CYANEA** (LINN.) GRAY.  
Indigo Bunting. [387.]
- PASSERINA AMCENA** (SAY) GRAY.  
Lazuli Bunting. [386.]
- PASSERINA VERSICOLOR** (BONAP.) GRAY.  
Varied Bunting. [385.]
- PASSERINA CIRIS** (LINN.) GRAY.  
Painted Bunting; Nonpareil. [384.]
- SPERMOPHILA MORELETI** PUCHERAN.  
Morelet's Seed-eater. [388.]
- PHONIPARA ZENA** (LINN.) BRYANT.  
Black-faced Seed-eater.
- SPIZA AMERICANA** (GM.) BONAP.  
Black-throated Bunting. [378.]
- SPIZA TOWNSENDI** (AUD.) RIDGW.  
Townsend's Bunting. [379.]
- CALAMOSPIZA BICOLOR** (TOWNS.) BONAP.  
Lark Bunting. [377.]
- DOLICHONYX ORYZIVORUS** (LINN.) SWAINS.  
Bobolink. [399.]
- MOLOTHRUS ATER** (BODD.) GRAY.  
Cowbird. [400.]
2. **MOLOTHRUS ATER OBSCURUS** (GMEL.) COUES.  
Dwarf Cowbird.
1. **MOLOTHRUS ÆNEUS** (WAGL.) CABAN.  
Bronzed Cowbird.
1. **XANTHOCEPHALUS ICTEROCEPHALUS** (BONAP.) BD.  
Yellow-headed Blackbird. [404.]
1. **AGELÆUS PHENICEUS** (LINN.) VIEILL.  
Red-and-buff-shouldered Blackbird. [401.]

- 261a. **AGELÆUS PHOENICEUS GUBERNATOR** (WAGL.) COUES.  
Red-and-black-shouldered Blackbird. [402.]
262. **AGELÆUS TRICOLOR** (NUTT.) BP.  
Red-and-white-shouldered Blackbird. [403.]
263. **STURNELLA MAGNA** (LINN.) SWAINS.  
Meadow Lark. [406.]
- 263a. **STURNELLA MAGNA MEXICANA** (SCL.) RIDGW.  
Mexican Meadow Lark.
264. **STURNELLA NEGLECTA** AUD.  
Western Meadow Lark. [407.]
265. **ICTERUS VULGARIS** DAUD.  
Troupial. [408.]
266. **ICTERUS AUDUBONI** GIRAUD.  
Audubon's Oriole. [409.]
267. **ICTERUS WAGLERI** SCL.  
Wagler's Oriole. [412.]
268. **ICTERUS PARISORUM** BONAP.  
Scott's Oriole. [411.]
269. **ICTERUS CUCULLATUS** SWAINS.  
Hooded Oriole. [413.]
270. **ICTERUS SPURIUS** (LINN.) BP.  
Orchard Oriole. [414.]
271. **ICTERUS GALBULA** (LINN.) COUES.  
Baltimore Oriole. [415.]
272. **ICTERUS BULLOCKI** (SWAINS.) BP.  
Bullock's Oriole. [416.]
273. **SCOLECOPHAGUS FERRUGINEUS** (GM.) SWAINS.  
Rusty Blackbird. [417.]
274. **SCOLECOPHAGUS CYANOCEPHALUS** (WAGL.) CARAN.  
Brewer's Blackbird. [418.]
275. **QUISCALUS MACRURUS** SWAINS.  
Great-tailed Grackle. [419.]
276. **QUISCALUS PALUSTRIS** SWAINS.  
Mexican Boat-tailed Grackle.
277. **QUISCALUS MAJOR** VIEILL.  
Boat-tailed Grackle. [420.]
278. **QUISCALUS PURPUREUS** (RATTE.) LICHT.  
Purple Grackle. [421.]
- 278a. **QUISCALUS PURPUREUS AGLEUS** (BAIRD) COUES.  
Florida Grackle. [422.]

- 278<sup>b</sup>. **QUISCALUS PURPUREUS AENEUS** RIDGW.  
Bronzed Grackle.
- [279.] **STURNUS VULGARIS** LINN.  
European Starling.
280. **CORVUS CORAX CARNIVORUS** (BARTR.) RIDGW.  
American Raven. [423, 424.]
281. **CORVUS CRYPTOLEUCUS** COUCH.  
White-necked Raven. [425.]
282. **CORVUS FRUGIVORUS** BARTR.  
Common Crow. [426.]
- 282<sup>a</sup>. **CORVUS FRUGIVORUS FLORIDANUS** (BAIRD) RIDGW.  
Florida Crow. [427.]
- 282<sup>b</sup>. **CORVUS FRUGIVORUS CAURINUS** (BAIRD) RIDGW.  
Northwestern Fish Crow. [428.]
283. **CORVUS OSSIFRAGUS** WILS.  
Fish Crow. [429.]
284. **PICICORVUS COLUMBIANUS** (WILS.) BR.  
Clarke's Nutcracker. [430.]
285. **GYMNOCITTA CYANOCEPHALA** MAX.  
Maximilian's Nutcracker; Pilon Jay. [431.]
286. **PICA RUSTICA HUDSONICA** (SCOP.) BAIRD.  
Black-billed Magpie. [432.]
287. **PICA NUTTALLI** AUD.  
Yellow-billed Magpie. [433.]
288. **PSILORHINUS MORIO** (WAGL.) GRAY.  
Brown Jay. [444.]
289. **CYANOCITTA CRISTATA** (LINN.) STRICKL.  
Blue Jay. [434.]
290. **CYANOCITTA STELLERI** (GM.) CABAN.  
Steller's Jay. [435.]
- 290<sup>a</sup>. **CYANOCITTA STELLERI FRONTALIS** RIDGW.  
Blue-fronted Jay.
- 290<sup>b</sup>. **CYANOCITTA STELLERI ANNECTENS** (BAIRD) RIDGW.  
Black-headed Jay.
- 290<sup>c</sup>. **CYANOCITTA STELLERI MACROLOPHA** (BAIRD) RIDGW.  
Long-crested Jay. [436.]
291. **APHELOCOMA FLORIDANA** (BARTR.) CABAN.  
Florida Jay. [439.]
292. **APHELOCOMA WOODHOUSEI** (BAIRD) RIDGW.  
Woodhouse's Jay. [438.]

293. **APHELOCOMA CALIFORNICA** (VIG.) CABAN.  
California Jay. [437.]
294. **APHELOCOMA ULTRAMARINA COUCHI** BAIRD.  
Couch's Jay. [441.]
295. **APHELOCOMA SORDIDA ARIZONÆ** RIDGW.  
Arizona Jay. [440.]
296. **XANTHURA LUXUOSA** (LESS.) BP.  
Green Jay. [442.]
297. **PERISOREUS CANADENSIS** (LINN.) BP.  
Canada Jay. [443.]
- 297 a. **PERISOREUS CANADENSIS CAPITALIS** BAIRD.  
White-headed Jay.
- 297 b. **PERISOREUS CANADENSIS FUMIFRONS** RIDGW.  
Smoky-fronted Jay.
298. **PERISOREUS OBSCURUS** RIDGW.  
Oregon Jay.
- [299.] **ALAUDA ARVENSIS** LINN.  
Sky Lark.
300. **BREMOPHILA ALPESTRIS** (FORST.) BOIE.  
Shore Lark. [302.]
- 300 a. **BREMOPHILA ALPESTRIS LEUCOLÆMA** COUES.  
White-throated Shore Lark.
- 300 b. **BREMOPHILA ALPESTRIS CHRYSOLÆMA** (WAGL.) COUES.  
Mexican Shore Lark.
301. **MILVULUS FORFICATUS** (GM.) SWAINS.  
Scissor-tailed Flycatcher. [123.]
- [302.] **MILVULUS TYRANNUS** (LINN.) BP.  
Fork-tailed Flycatcher. [122.]
303. **TYRANNUS DOMINICENSIS** (GM.) REICH.  
Gray Kingbird. [125.]
304. **TYRANNUS CAROLINENSIS** (LINN.) TEMM.  
Kingbird; Bee Martin. [124.]
305. **TYRANNUS MELANCHOLICUS COUCHI** BAIRD.  
Couch's Kingbird. [128, 129.]
306. **TYRANNUS VERTICALIS** SAY.  
Western Kingbird. [126.]
307. **TYRANNUS VOCIFERANS** SWAINS.  
Cassin's Kingbird. [127.]
308. **PITANGUS DERBIANUS** (KAUP) SCH.  
Mexican Pitangus.



- MYIOZETTES TEXENSIS** (GIRAUD) SCL.  
Giraud's Flycatcher.
- MYIODYNASTES LUTEIVENTRIS** BONAP.  
Henshaw's Flycatcher.
- MYIARCHUS MEXICANUS** (KAUP) LAWR.  
Mexican Great Crested Flycatcher. [132.]
- MYIARCHUS CRINITUS** (LINN.) CABAN.  
Great Crested Flycatcher. [130.]
- MYIARCHUS CINERASCENS** LAWR.  
Ash-throated Flycatcher. [131.]
- MYIARCHUS LAWRENCEI** (GIRAUD) BAIRD.  
Lawrence's Flycatcher. [133.]
- SAYORNIS FUSCUS** (GMEL.) BAIRD.  
Phoebe Bird; Pewee. [135.]
- SAYORNIS SAYI** (BONAP.) BAIRD.  
Say's Pewee. [136.]
- SAYORNIS NIGRICANS** (SWAINS.) BP.  
Black Pewee. [134.]
- CONTOPUS BOREALIS** (SWAINS.) BAIRD.  
Olive-sided Flycatcher. [137.]
- CONTOPUS PERTINAX** CABAN.  
Cous's Flycatcher.
- CONTOPUS VIRENS** (LINN.) CABAN.  
Wood Pewee. [139.]
- CONTOPUS RICHARDSONI** (SW.) BAIRD.  
Western Wood Pewee. [138.]
- EMPIDONAX FLAVIVENTRIS** BAIRD.  
Yellow-bellied Flycatcher. [144.]
- EMPIDONAX DIFFICILIS** BAIRD.  
Western Yellow-bellied Flycatcher. [144a.]
- EMPIDONAX ACADICUS** (GMEL.) BAIRD.  
Acadian Flycatcher. [143.]
- EMPIDONAX PUSILLUS** (SWAINS.) BD.  
Little Flycatcher. [141.]
- EMPIDONAX PUSILLUS TRAILLI** (AUD.) BAIRD.  
Traill's Flycatcher. [140.]
- EMPIDONAX MINIMUS** BAIRD.  
Least Flycatcher. [142.]
- EMPIDONAX HAMMONDI** (XANTUS) BD.  
Hammond's Flycatcher. [145.]

328. **EMPIDONAX OBSCURUS** (SWAINS.) BAIRD.  
Wright's Flycatcher. [146.]
329. **EMPIDONAX FULVIFRONS** (GIRAUD) SCL.  
Fulvous Flycatcher.
- 329a. **EMPIDONAX FULVIFRONS PALLESCENS** COUES.  
Buff-breasted Flycatcher.
330. **PYROCEPHALUS RUBINEUS MEXICANUS** (SCL.) COUES.  
Vermilion Flycatcher. [147.]
331. **ORNITHION IMBERBE** (SCL.) COUES.  
Small-billed Flycatcher.
332. **PACHYRHAMPHUS MAJOR** (BONAP.) SCL.  
Thick-billed Flycatcher. [121.]
333. **HADROSTOMUS AGLAÏE** (LAFR.) CAB.  
Rose-throated Flycatcher. [120.]
334. **EUGENES FULGENS** (SWAINS.) GOULD.  
Refulgent Hummingbird.
335. **TROCHILUS COLUBRIS** LINN.  
Ruby-throated Hummingbird. [101.]
336. **TROCHILUS ALEXANDRI** BOURC. & Muls.  
Black-chinned Hummingbird. [102.]
337. **CALYPTE COSTÆ** (BOURC.) GOULD.  
Costa's Hummingbird. [106.]
338. **CALYPTE ANNÆ** (LESS.) GOULD.  
Anna's Hummingbird. [105.]
339. **SELASPHORUS PLATYCERCUS** (SWAINS.) BR.  
Broad-tailed Hummingbird. [104.]
340. **SELASPHORUS RUFUS** (GMEL.) AUD.  
Rufous Hummingbird. [103.]
341. **SELASPHORUS ALLENI** HENSH.  
Allen's Hummingbird.
342. **ATTHIS HELOISÆ** (LESS.) REICH.  
Heloise's Hummingbird.
343. **STELLULA CALLIOPE** GOULD.  
Calliope Hummingbird.
344. **CALOTHORAX LUCIFER** (SWAINS.) GRAY.  
Lucifer Hummingbird.
345. **AMAXILIA FUSCICAUDATA** (FRASER) RIDGW.  
Rieser's Hummingbird.
346. **AMAXILIA CERVINIVENTRIS** GOULD.  
Buff-bellied Hummingbird.

- BASILINNA XANTUSI** (LAWR.) ELLIOT.  
Xantus's Hummingbird.
- IACHE LATIROSTRIS** (SWAINS.) ELLIOT.  
Broad-billed Hummingbird.
- CYPSELUS SAXATILIS** WOODH.  
White-throated Swift. [107.]
- CYPSELOIDES NIGER BOREALIS** (KENNERLY) RIDGW.  
Black Swift. [108.]
- CHÆTURA PELASGICA** (LINN.) BAIRD.  
Chimney Swift. [109.]
- CHÆTURA VAUXI** (TOWNS.) DE KAY.  
Vaux's Swift. [110.]
- ANTROSTOMUS CAROLINENSIS** (GM.) GOULD.  
Chuck-will's-widow. [111.]
- CAPRIMULGUS VOCIFERUS** WILS.  
Whip-poor-will. [112.]
- PHALÆNOPTILUS NUTTALLI** (AUD.) RIDGW.  
Poor-will. [113.]
- NYCTIDROMUS ALBICOLLIS** (GM.) BURM.  
Parauque Goatsucker. [116a.]
- CHORDEILES POPETUE** (VIEILL.) BD.  
Nighthawk. [114.]
- . **CHORDEILES POPETUE HENRYI** (CASS.) ALLEN.  
Western Nighthawk. [115.]
- . **CHORDEILES POPETUE MINOR** (CABAN.) RIDGW.  
Cuban Nighthawk.
- CHORDEILES ACUTIPENNIS TEXENSIS** (LAWR.) RIDGW.  
Texan Nighthawk. [116.]
- CAMPEPHILUS PRINCIPALIS** (LINN.) GRAY.  
Ivory-billed Woodpecker. [72.]
- PICUS VILLOSUS** LINN.  
Hairy Woodpecker. [74.]
- . **PICUS VILLOSUS LEUCOMELAS** (BODD.) RIDGW.  
Great White-backed Sapsucker.
- . **PICUS VILLOSUS HARRISI** (AUD.) ALLEN.  
Harris's Woodpecker. [75.]
- PICUS PUBESCENS** LINN.  
Downy Woodpecker. [76.]
- . **PICUS PUBESCENS GAIRDNERI** (AUD.) COUES.  
Gairdner's Woodpecker. [77.]

362. **PICUS QUERULUS** WILS.  
Red-cockaded Woodpecker. [80.]
363. **PICUS SCALARIS** WAGL.  
Texan Sapsucker. [79.]
- 363 a. **PICUS SCALARIS LUCASANUS** (XANT.) RIDGW.  
Saint Lucas Sapsucker.
364. **PICUS NUTTALLI** GAMB.  
Nuttall's Woodpecker. [78.]
365. **PICUS STRICKLANDI** MALH.  
Strickland's Woodpecker.
366. **XENOPICUS ALBOLARVATUS** (CASS.) BAIRD.  
White-headed Woodpecker. [81.]
367. **PICOIDES ARCTICUS** (SWAINS.) GRAY.  
Black-backed Three-toed Woodpecker. [82.]
368. **PICOIDES TRIDACTYLUS AMERICANUS** (BREHM) RIDGW.  
Banded-backed Three-toed Woodpecker. [83.]
- 368 a. **PICOIDES TRIDACTYLUS DORSALIS** (BAIRD) RIDGW.  
Striped-backed Three-toed Woodpecker. [84.]
369. **SPHYRAPICUS VARIUS** (LINN.) BAIRD.  
Yellow-bellied Woodpecker. [85.]
- 369 a. **SPHYRAPICUS VARIUS NUCHALIS** BAIRD.  
Red-naped Woodpecker. [86.]
- 369 b. **SPHYRAPICUS VARIUS RUBER** (GM.) RIDGW.  
Red-breasted Woodpecker. [87.]
370. **SPHYRAPICUS THYROIDEUS** (CASS.) BAIRD.  
Black-breasted Woodpecker. [88, 89.]
371. **HYLOTOMUS PILEATUS** (LINN.) BAIRD.  
Pileated Woodpecker; Logcock. [90.]
372. **CENTURUS CAROLINUS** (L.) BP.  
Red-bellied Woodpecker. [91.]
373. **CENTURUS AURIFRONS** WAGL.  
Golden-fronted Woodpecker. [92.]
374. **CENTURUS UROPYGIALIS** BAIRD.  
Gila Woodpecker. [93.]
375. **MELANERPES ERYTHROCEPHALUS** (LINN.) SW.  
Red-headed Woodpecker. [94.]
376. **MELANERPES TORQUATUS** (WILS.) BONAP.  
Lewis's Woodpecker. [96.]
377. **MELANERPES FORMICIVORUS BAIRDI** RIDGW.  
Californian Woodpecker. [95.]

- 377a. **MELANERPES FORMICIVORUS ANGUSTIFRONS** BAIRD.  
Narrow-fronted Woodpecker.
378. **COLAPTES AURATUS** (LINN.) SW.  
Yellow-shafted Flicker. [97.]
- 378a. **COLAPTES AURATUS HYBRIDUS** (BAIRD) RIDGW.  
"Hybrid" Flicker. [98a.]
- 378b. **COLAPTES AURATUS MEXICANUS** (SW.) RIDGW.  
Red-shafted Flicker. [98.]
379. **COLAPTES CHRYSOIDES** (MALH.) BAIRD.  
Malherbe's Flicker. [99.]
380. **COLAPTES RUFIPILEUS** RIDGW.  
Guadalupe Flicker.
381. **MOMOTUS CÆRULEICEPS** GOULD.  
Blue-capped Motmot. [119.]
382. **CERYLE ALCYON** (LINN.) BOIE.  
Belted Kingfisher. [117.]
383. **CERYLE AMERICANA CABANISI** (TSCHUDI) COUES.  
Texan Kingfisher. [118.]
384. **TROGON AMBIGUUS** GOULD.  
Coppery-tailed Trogon. [65.]
385. **GEOCOCYX CALIFORNIANUS** (LESS.) BAIRD.  
Road-runner; Chaparral Cock. [68.]
386. **COCCYZUS SENICULUS** (LATH.) VIEILL.  
Mangrove Cuckoo. [71.]
387. **COCCYZUS AMERICANUS** (LINN.) BP.  
Yellow-billed Cuckoo. [69.]
388. **COCCYZUS ERYTHROPTHALMUS** (WILS.) BAIRD.  
Black-billed Cuckoo. [70.]
389. **CROTOPHAGA ANI** LINN.  
Savannah Blackbird. [66, 67.]
390. **CROTOPHAGA SULCIROSTRIS** SWAINS.  
Groove-billed Crotophaga.
391. **RYNCHOPSITTA PACHYRHYNCHA** (SWAINS.) BP.  
Thick-billed Parrot. [64.]
392. **CONURUS CAROLINENSIS** (LINN.) KUHLM.  
Carolina Parakeet. [63.]
393. **CONURUS HOLOCHLORUS BREVIPES** BAIRD.  
Socorro Parakeet.
394. **ALUCO FLAMMEUS AMERICANUS** (AUD.) RIDGW.  
American Barn Owl. [47.]

395. **ASIO AMERICANUS** (STEPH.) SHARPE.  
American Long-eared Owl. [51.]
396. **ASIO ACCIPITRINUS** (PALL.) NEWTON.  
Short-eared Owl. [52.]
397. **STRIX NEBULOSA** FORST.  
Barred Owl. [54.]
- 397 a. **STRIX NEBULOSA ALLENI** RIDGW.  
Florida Barred Owl
398. **STRIX OCCIDENTALIS** (XANT.) RIDGW.  
Spotted Owl
399. **ULULA CINEREA** (GMEL.) BP.  
Great Gray Owl. [53.]
- [399 a.] **ULULA CINEREA LAPPONICA** (REIZ.) RIDGW.  
Lapland Owl
400. **NYCTALE TENGMALMI RICHARDSONI** (BP.) RIDGW.  
Richardson's Owl. [55.]
401. **NYCTALE ACADICA** (GMEL.) BP.  
Saw-whet Owl. [56, 57.]
402. **SCOPS ASIO** (LINN.) BP.  
Little Screech Owl. [49.]
- 402 a. **SCOPS ASIO FLORIDANUS** RIDGW.  
Florida Screech Owl
- 402 b. **SCOPS ASIO MACCALLI** (CASS.) RIDGW.  
Texan Screech Owl. [50.]
- 402 c. **SCOPS ASIO MAXWELLII** RIDGW.  
Rocky Mountain Screech Owl.
- 402 d. **SCOPS ASIO KENNICOTTI** (ELLIOT) RIDGW.  
Northwestern Screech Owl.
403. **SCOPS TRICHOPSIS** WAGL.  
Mexican Screech Owl
404. **SCOPS FLAMMEOLUS** (LICHT.) SCL.  
Flammulated Screech Owl.
405. **BUBO VIRGINIANUS** (GM.) BP.  
Great Horned Owl. [48.]
- 405 a. **BUBO VIRGINIANUS SUBARCTICUS** (HOY) RIDGW.  
Western Horned Owl.
- 405 b. **BUBO VIRGINIANUS ARCTICUS** (SWAINS.) CASS.  
Arctic Horned Owl
- 405 c. **BUBO VIRGINIANUS SATURATUS** RIDGW.  
Dusky Horned Owl.

406. **NYCTEA SCANDIACA** (LINN.) NEWT.  
Snowy Owl. [61.]
407. **SURNIA FUNEREA** (LINN.) RICH & SW.  
American Hawk Owl. [62.]
- [407 a.] **SURNIA FUNEREA ULULA** (LINN.) RIDGW.  
European Hawk Owl.
408. **SPEOTYTO CUNICULARIA HYPOGÆA** (BONAP.) RIDGW.  
Burrowing Owl. [58, 59.]
- 408 a. **SPEOTYTO CUNICULARIA FLORIDANA** RIDGW.  
Florida Burrowing Owl.
409. **GLAUCIDIUM GNOMA** WAGL.  
California Pigmy Owl. [60.]
410. **GLAUCIDIUM PHALÆNOIDES** (DAUD.) SCL. & SALV.  
Ferruginous Pigmy Owl.
411. **MICRATHENE WHITNEYI** (COOPER) COUES.  
Whitney's Pigmy Owl.
412. **HIEROFALCO GYRFALCO CANDICANS** (GM.) RIDGW.  
White Gyrfalcon. [11.]
- 412 a. **HIEROFALCO GYRFALCO ISLANDUS** (GM.) RIDGW.  
Iceland Gyrfalcon. [12.]
- 412 b. **HIEROFALCO GYRFALCO SACER** (FORST.) RIDGW.  
McFarlane's Gyrfalcon.
- 412 c. **HIEROFALCO GYRFALCO OBSOLETUS** (GM.) RIDGW.  
Labrador Gyrfalcon.
413. **HIEROFALCO MEXICANUS POLYAGRUS** (CASS.) RIDGW.  
Prairie Falcon. [10.]
414. **FALCO PEREGRINUS NÆVIUS** (GM.) RIDGW.  
American Peregrine Falcon; Duck Hawk. [5, 6.]
- 414 a. **FALCO PEREGRINUS PEALEI** RIDGW.  
Peale's Falcon.
415. **FALCO ALBIGULARIS** DAUD.  
Chestnut-thighed Falcon. [8.]
- [416.] **ÆSALON REGULUS** (PALL.) BLYTH.  
European Merlin.
417. **ÆSALON COLUMBARIUS** (LINN.) KAUP.  
Pigeon Hawk. [7.]
- 417 a. **ÆSALON COLUMBARIUS SUCKLEYI** RIDGW.  
Black Merlin.
418. **ÆSALON RICHARDSONI** RIDGW.  
Richardson's Merlin.

419. **RHYNCHOFALCO FUSCO-CÆRULESCENS** (VIEILL.) RIDGW.  
Aplomado Falcon. [9.]
420. **TINNUNCULUS SPARVERIUS** (LINN.) VIEILL.  
Sparrow Hawk. [13.]
- 420a. **TINNUNCULUS SPARVERIUS ISABELLINUS** (SWAINA.) RIDG  
Isabelline Sparrow Hawk.
421. **TINNUNCULUS SPARVERIOIDES** (VIG.) GRAY.  
Cuban Sparrow Hawk.
- [422.] **TINNUNCULUS ALAUDARIUS** (GM.) GRAY.  
European Kestrel.
423. **POLYBORUS CHERIWAY** (JACQ.) CABAN.  
Caracara Eagle. [45.]
424. **POLYBORUS LUTOSUS** RIDGW.  
Guadalupe Caracara.
425. **PANDION HALIAETUS CAROLINENSIS** (GM.) RIDGW.  
American Osprey; Fish Hawk. [44.]
426. **ELANOIDES FORFICATUS** (LINN.) RIDGW.  
Swallow-tailed Kite. [34.]
427. **ELANUS GLAUCUS** (BARTR.) COUES.  
White-tailed Kite. [35.]
428. **ICTINIA SUBCÆRULEA** (BARTR.) COUES.  
Mississippi Kite. [36.]
429. **ROSTRHAMUS SOCIABILIS PLUMBEUS** RIDGW.  
Everglade Kite. [37.]
430. **CIRCUS HUDSONIUS** (LINN.) VIEILL.  
Marsh Hawk. [38.]
431. **ACCIPITER COOPERI** BONAP.  
Cooper's Hawk. [15, 16.]
432. **ACCIPITER FUSCUS** (GMEL.) BP.  
Sharp-shinned Hawk. [17.]
433. **ASTUR ATRICAPILLUS** (WILS.) BP.  
American Goshawk. [14.]
- 433a. **ASTUR ATRICAPILLUS STRIATULUS** RIDGW.  
Western Goshawk.
434. **ANTENOR UNICINCTUS HARRISI** (AUD.) RIDGW.  
Harris's Hawk. [46.]
- [435.] **BUTEO VULGARIS** LEACH.  
European Buzzard.
436. **BUTEO BOREALIS** (GM.) VIEILL.  
Red-tailed Hawk. [23.]



- 436a. **BUTEO BOREALIS KRIDERI** HOOPES.  
Krider's Hawk.
- 436b. **BUTEO BORHALIS CALURUS** (CASS.) RIDGW.  
Western Red-tail. [20, 24.]
- 436c. **BUTEO BOREALIS LUCASANUS** RIDGW.  
Saint Lucas Red-tail.
- 436d. **BUTEO BOREALIS SOCORROENSIS** RIDGW.  
Socorro Red-tail.
437. **BUTEO COOPERI** CASS.  
Cooper's Henhawk. [29.]
438. **BUTEO HARLANI** AUD.  
Harlan's Hawk. [22.]
439. **BUTEO LINEATUS** (GM.) JARD.  
Red-shouldered Hawk. [25.]
- 439a. **BUTEO LINEATUS ELEGANS** (CASS.) RIDGW.  
Red-bellied Hawk. [26.]
440. **BUTEO ABBREVIATUS** CABAN.  
Zone-tailed Hawk.
441. **BUTEO ALBICAUDATUS** VIEILL.  
White-tailed Hawk.
442. **BUTEO SWAINSONI** BONAP.  
Swainson's Hawk. [18, 19, 21, 28.]
443. **BUTEO PENNSYLVANICUS** (WILS.) BP.  
Broad-winged Hawk. [27.]
444. **URUBITINGA ANTHRACINA** (LICHT.) LAFF.  
Mexican Black Hawk.
445. **ASTURINA NITIDA PLAGIATA** (LICHT.) RIDGW.  
Mexican Goshawk. [33.]
446. **ONYCHOTES GRUBERI** RIDGW.  
Gruber's Hawk.
447. **ARCHIBUTEO LAGOPUS SANCTI-JOHANNIS** (GMEL.) RIDGW.  
American Rough-legged Hawk. [30, 31.]
448. **ARCHIBUTEO FERRUGINEUS** (LICHT.) GRAY.  
Ferruginous Rough-leg. [32.]
449. **AQUILA CHRYSÆTUS CANADENSIS** (LINN.) RIDGW.  
Golden Eagle. [39.]
450. **THERASAETUS HARPYIA** (LINN.) GRAY.  
Harpy Eagle.
451. **HALLIETUS LEUCOCEPHALUS** (LINN.) SAVIG.  
Bald Eagle; Gray Eagle. [41, 43.]

452. **HALIÆTUS ALBICILLA** (LINN.) LEACH.  
Gray Sea Eagle. [42.]
453. **PSEUDOGYPHUS CALIFORNIANUS** (SHAW) RIDGW.  
Californian Condor. [2.]
454. **CATHARTES AURA** (LINN.) ILLIG.  
Turkey Buzzard. [1.]
455. **CATHARISTA ATRATA** (WILS.) LESS.  
Black Vulture; Carrion Crow. [3.]
456. **COLUMBA FASCIATA** SAY.  
Band-tailed Pigeon. [445.]
457. **COLUMBA ERYTHRINA** LIGHT.  
Red-billed Pigeon. [446.]
458. **COLUMBA LEUCOCEPHALA** LINN.  
White-crowned Pigeon. [447.]
459. **ECTOPISTES MIGRATORIA** (LINN.) SW.  
Passenger Pigeon. [448.]
460. **ZENAIIDURA CAROLINENSIS** (LINN.) BP.  
Mourning Dove. [451.]
461. **ZENAIIDURA GRAYSONI** BAIRD.  
Socorro Dove.
462. **ZENAIIDA AMABILIS** BP.  
Zenaida Dove. [449.]
463. **ENGYPHTILA ALBIFRONS** (BP.) COUES.  
White-fronted Dove.
464. **MELOPHELIA LEUCOPTERA** (L.) BP.  
White-winged Dove. [450.]
465. **CHAMÆPHELIA PASSERINA** (L.) SWAINS.  
Ground Dove. [453.]
466. **SCARDAPELLA INCA** (LESS.) BP.  
Scaled Dove. [452.]
467. **GEOTRYGON MARTINICA** (GM.) BP.  
Key West Dove. [454.]
468. **STARNCENAS CYANOCEPHALA** (LINN.) BP.  
Blue-headed Dove. [455.]
469. **ORTALIS VETULA MACCALLI** (BAIRD) RIDGW.  
Chachalaca; Texan Guan. [456.]
470. **MELEAGRIS GALLOPAVO** LINN.  
Mexican Turkey. [458.]
- 470a. **MELEAGRIS GALLOPAVO AMERICANA** (BARTR.) COUES.  
Wild Turkey. [457.]

471. **CANACE OBSCURA** (SAY) BP.  
Dusky Grouse. [459.]
- 471a. **CANACE OBSCURA FULIGINOSA** RIDGW.  
Sooty Grouse.
- 471b. **CANACE OBSCURA RICHARDSONI** (DOUGL.) BAIRD.  
Richardson's Grouse.
472. **CANACE CANADENSIS** (LINN.) BP.  
Canada Grouse; Spruce Partridge. [460.]
- 472a. **CANACE CANADENSIS FRANKLINI** (DOUGL.) BAIRD.  
Franklin's Grouse. [461.]
473. **BONASA UMBELLUS** (LINN.) STEPH.  
Ruffed Grouse. [465.]
- 473a. **BONASA UMBELLUS UMBELLOIDES** (DOUGL.) BAIRD.  
Gray Ruffed Grouse. [465a.]
- 473b. **BONASA UMBELLUS SABINEI** (DOUGL.) COUES.  
Oregon Ruffed Grouse. [466.]
474. **LAGOPUS ALBUS** (GM.) AUD.  
Willow Ptarmigan. [467, 470.]
475. **LAGOPUS RUPESTRIS** (GM.) LEACH.  
Rock Ptarmigan. [468.]
476. **LAGOPUS LEUCURUS** SW.  
White-tailed Ptarmigan. [469.]
477. **CUPIDONIA CUPIDO** (LINN.) BAIRD.  
Prairie Hen. [464.]
- 477a. **CUPIDONIA CUPIDO PALLIDICINCTA** RIDGW.  
Lesser Prairie Hen.
478. **PEDICECETES PHASIANELLUS** (L.) ELLIOT.  
Northern Sharp-tailed Grouse.
- 478a. **PEDICECETES PHASIANELLUS COLUMBIANUS** (ORD) COUES.  
Common Sharp-tailed Grouse. [463.]
479. **CENTROCERCUS UROPHASIANUS** (BP.) SWAINS.  
Sage Cook. [462.]
480. **ORTYX VIRGINIANA** (L.) BP.  
Bob-white; American Quail. [471.]
- 480a. **ORTYX VIRGINIANA FLORIDANA** COUES.  
Florida Quail.
- 480b. **ORTYX VIRGINIANA TEXANA** (LAWR.) COUES.  
Texan Quail. [472.]
481. **ORBORTYX PICTA** (DOUGL.) BAIRD.  
Mountain Quail. [473.]

- 481 a. **OREORTYX PICTA PLUMIFERA** (GOULD) RIDGW.  
Plumed Quail.
482. **LOPHORTYX CALIFORNICA** (SHAW) BP.  
Californian Quail. [474.]
483. **LOPHORTYX GAMBELI** NUTT.  
Gambel's Quail. [475.]
484. **CALLIPEPLA SQUAMATA** (VIG.) GRAY.  
Scaled Quail. [476.]
485. **CYRTONYX MASSENA** (LESS.) GOULD.  
Massena Quail. [477.]
486. **ARDEA OCCIDENTALIS** AUD.  
Great White Heron; Würdemann's Heron. [488, 489.]
487. **ARDEA HERODIAS** LINN.  
Great Blue Heron. [487.]
- [488.] **ARDEA CINEREA** LINN.  
Common European Heron.
489. **HERODIAS ALBA EGRETTE** (GMEL.) RIDGW.  
American Egret. [486, 486 a.]
490. **GARZETTA CANDIDISSIMA** (GMEL.) BP.  
Snowy Heron. [485.]
491. **DICHROMANASSA RUFA** (BODD.) RIDGW.  
Reddish Egret; Peale's Egret. [482, 483.]
492. **HYDRANASSA TRICOLOR LUDOVICIANA** (WILS.) RIDGW.  
Louisiana Heron. [484.]
493. **FLORIDA CÆRULEA** (LINN.) BAIRD.  
Little Blue Heron. [490.]
494. **BUTORIDES VIRESCENS** (LINN.) BP.  
Green Heron. [493.]
495. **NYCTIARDEA GRISEA NÆVIA** (BODD.) ALLEN.  
Black-crowned Night Heron. [495.]
496. **NYCTHERODIUS VIOLACEUS** (LINN.) REICH.  
White-crowned Night Heron. [496.]
497. **BOTAURUS LENTIGINOSUS** (MONTAG.) STEPH.  
American Bittern. [492.]
498. **ARDETTA EXILIS** (GMEL.) GRAY.  
Least Bittern. [491.]
499. **MYCTERIA AMERICANA** LINN.  
Jabiru.
500. **TANTALUS LOCULATOR** LINN.  
Wood Ibis. [497.]

501. **EUDOCIMUS ALBUS** (LINN.) WAGL.  
White Ibis. [499.]
502. **EUDOCIMUS RUBER** (LINN.) WAGL.  
Scarlet Ibis. [498.]
503. **PLEGADIS FALCINELLUS** (LINN.) KAUF.  
Glossy Ibis. [500.]
504. **PLEGADIS GUARAUNA** (LINN.) RIDGW.  
White-faced Glossy Ibis. [500a.]
505. **AJAJA ROSEA** (BRISS.) RIDGW.  
Roseate Spoonbill. [501.]
- [506.] **HÆMATOPUS OSTRALÆGUS** LINN.  
European Oystercatcher.
507. **HÆMATOPUS PALLIATUS** TEMM.  
American Oystercatcher. [512.]
508. **HÆMATOPUS NIGER** PALL.  
Black Oystercatcher. [513.]
509. **STREPSILAS INTERPRES** (LINN.) ILLIG.  
Turnstone. [515.]
510. **STREPSILAS MELANOCEPHALA** VIG.  
Black Turnstone. [516.]
511. **APHRIZA VIRGATA** (GMEL.) GRAY.  
Surf Bird. [511.]
- [512.] **VANELLUS CRISTATUS** MEYER.  
Lapwing.
513. **SQUATAROLA HELVETICA** (LINN.) CUV.  
Black-bellied Plover. [510.]
- [514.] **CHARADRIUS FLUVIALIS** LINN.  
Golden Plover.
515. **CHARADRIUS DOMINICUS** MÜLL.  
American Golden Plover. [503.]
- [515a.] **CHARADRIUS DOMINICUS FULVUS** (GMEL.) RIDGW.  
Pacific Golden Plover.
516. **OXYECHUS VOCIFERUS** (LINN.) REICH.  
Killdeer. [504.]
517. **ÆGIALITES SEMIPALMATUS** BONAP.  
Semipalmated Plover. [507.]
518. **ÆGIALITES HIATICULA** (LINN.) BOIE.  
Ringed Plover.
- [519.] **ÆGIALITES CURONICUS** (GMEL.) GRAY.  
Little Ringed Plover.

520. **ÆGIALITES MELODUS** (ORD) BP.  
Piping Plover. [503.]
- 520a. **ÆGIALITES MELODUS CIRCUMCINCTUS** RIDGW.  
Belted Piping Plover.
521. **ÆGIALITES CANTIANUS NIVOSUS** (CASS.) RIDGW.  
Snowy Plover. [509.]
522. **OCHTHODROMUS WILSONIUS** (ORD) REICH.  
Wilson's Plover. [506.]
523. **PODASOCYS MONTANUS** (TOWNS.) COUES.  
Mountain Plover. [505.]
- [524.] **SCOLOPAX RUSTICULA** LINN.  
European Woodcock.
525. **PHILOHELA MINOR** (GMEL.) GRAY.  
American Woodcock. [522.]
- [526.] **GALLINAGO MEDIA** LEACH.  
English Snipe.
- 526a. **GALLINAGO MEDIA WILSONI** (TEMM.) RIDGW.  
Wilson's Snipe. [523.]
527. **MACRORHAMPHUS GRISEUS** (GMEL.) LEACH.  
Red-breasted Snipe; Gray Snipe. [524.]
- 527a. **MACRORHAMPHUS GRISEUS SCOLOPACEUS** (SAY) COUES.  
Red-bellied Snipe; Greater Gray-back. [525.]
528. **MICROPALAMA HIMANTOPUS** (BONAP.) BAIRD.  
Stilt Sandpiper. [536.]
529. **TRINGA CANUTUS** LINN.  
Knot; Robin Snipe. [526.]
530. **ARQUATELLA MARITIMA** (BRÜNN.) BAIRD.  
Purple Sandpiper. [528.]
531. **ARQUATELLA COUESI** RIDGW.  
Aleutian Sandpiper.
532. **ARQUATELLA PTILOCNEMIS** (COUES) RIDGW.  
Frybillov Sandpiper.
- [533.] **ACTODROMAS ACUMINATA** (HORSF.) RIDGW.  
Sharp-tailed Sandpiper.
534. **ACTODROMAS MACULATA** (VIEILL.) COUES.  
Pectoral Sandpiper. [531.]
535. **ACTODROMAS COOPERI** (BAIRD) COUES.  
Cooper's Sandpiper. [527.]
536. **ACTODROMAS FUSCICOLOIDES** (BONAP.) RIDGW.  
Bonap.

537. **ACTODROMAS BAIRDI** COUES.  
Baird's Sandpiper.
538. **ACTODROMAS MINUTILLA** (VIEILL.) BP.  
Least Sandpiper. [532.]
- [539.] **PELIDNA ALPINA** (LINN.) BOIE.  
European Dunlin.
- 539a. **PELIDNA ALPINA AMERICANA** CASS.  
Red-backed Sandpiper. [530.]
- [540.] **PELIDNA SUBARQUATA** (GULD.) CUV.  
Curlew Sandpiper. [529.]
541. **EREUNETES PUSILLUS** (LINN.) CASS.  
Semipalmated Sandpiper. [535.]
- 541a. **EREUNETES PUSILLUS OCCIDENTALIS** (LAWR.) COUES.  
Western Sandpiper.
542. **CALIDRIS ARENARIA** (LINN.) ILLIG.  
Sanderling. [534.]
543. **LIMOSA FEDA** (LINN.) ORD.  
Marbled Godwit. [547.]
544. **LIMOSA LAPPONICA NOVÆ-ZEALANDIÆ** GRAY.  
Pacific Godwit.
545. **LIMOSA HÆMASTICA** (LINN.) COUES.  
Hudsonian Godwit. [548.]
- [546.] **LIMOSA ÆGOCEPHALA** (LINN.) LEACH.  
Black-tailed Godwit.
- [547.] **TOTANUS GLOTTIS** (LINN.) BECHST.  
Green-shank. [538.]
548. **TOTANUS MELANOLEUCUS** (GMEL.) VIEILL.  
Greater Yellow-legs; Tell-tale. [539.]
549. **TOTANUS FLAVIPES** (GMEL.) VIEILL.  
Yellow-legs. [540.]
550. **RHYACOPHILUS SOLITARIUS** (WILS.) CASS.  
Solitary Sandpiper. [541.]
- [551.] **RHYACOPHILUS OCHROPUS** (LINN.) RIDGW.  
Green Sandpiper.
552. **SYMPHEMIA SEMIPALMATA** (GMEL.) HARTL.  
Willet. [537.]
553. **HETEROSCELUS INCANUS** (GMEL.) COUES.  
Wandering Tattler. [542.]
- [554.] **MACHETES PUGNAX** (LINN.) CUV.  
Ruff. [544.]

555. **BARTRAMIA LONGICAUDA** (BECHST.) BP.  
Bartram's Sandpiper; Field Plover. [545.]
556. **TRYNGITES RUFESCENS** (VIEILL.) CABAN.  
Buff-breasted Sandpiper. [546.]
557. **TRINGOIDES MACULARIUS** (LINN.) GRAY.  
Spotted Sandpiper. [543.]
558. **NUMENIUS LONGIROSTRIS** WILS.  
Long-billed Curlew. [549.]
559. **NUMENIUS HUDSONICUS** LATH.  
Hudsonian Curlew. [550.]
560. **NUMENIUS BOREALIS** (FORST.) LATH.  
Esakimo Curlew. [551.]
- [561.] **NUMENIUS PHEOPUS** (LINN.) LATH.  
Whimbrel.
- [562.] **NUMENIUS TAHITIENSIS** (GMEL.) CASS.  
Bristle-thighed Curlew.
563. **PHALAROPUS FULICARIUS** (LINN.) BP.  
Red Phalarope. [521.]
564. **LOBIPES HYPERBOREUS** (LINN.) CUV.  
Northern Phalarope. [520.]
565. **STEGANOPUS WILSONI** (SAB.) COUES.  
Wilson's Phalarope. [519.]
566. **RECURVIROSTRA AMERICANA** GMEL.  
American Avocet. [517.]
567. **HIMANTOPUS MEXICANUS** (MÜLL.) ORD.  
Black-necked Stilt. [518.]
568. **PARRA GYMNOSTOMA** WAGL.  
Mexican Jacana.
569. **RALLUS ELEGANS** AUD.  
Red-breasted Rail. [542.]
570. **RALLUS OBSOLETUS** RIDGW.  
Californian Clapper Rail.
571. **RALLUS LONGIROSTRIS CREPITANS** (GMEL.) RIDGW.  
Clapper Rail. [553.]
- 571a. **RALLUS LONGIROSTRIS SATURATUS** HENSE.  
Louisiana Clapper Rail.
572. **RALLUS VIRGINIANUS** LINN.  
Virginian Rail. [554.]
- [573.] **PORZANA MARUETTA** (LEACH.) BP.  
Spotted Crane.



574. **PORZANA CAROLINA** (LINN.) BAIRD.  
Sora Rail. [555.]
575. **PORZANA NOVEBORACENSIS** (GMEL.) BAIRD.  
Little Yellow Rail. [557.]
576. **PORZANA JAMAICENSIS** (GMEL.) BAIRD.  
Little Black Rail. [556.]
- 576a. **PORZANA JAMAICENSIS COTURNICULUS** BAIRD.  
Farallone Rail.
- [577.] **CREX PRATENSIS** BECHST.  
Corn Crane. [558.]
578. **IONORNIS MARTINICA** (LINN.) REICH.  
Purple Gallinule. [561.]
579. **GALLINULA GALEATA** (LICHT.) BP.  
Florida Gallinule. [560.]
580. **FULICA AMERICANA** GMEL.  
American Coot. [559.]
581. **ARAMUS PICTUS** (BARTR.) COUES.  
The Limpkin. [481.]
582. **GRUS AMERICANA** (LINN.) TEMM.  
Whooping Crane. [478.]
583. **GRUS CANADENSIS** (LINN.) TEMM.  
Sandhill Crane. [479.]
584. **GRUS FRATERCULUS** CASS.  
Little Crane. [480.]
585. **PHENICOPTERUS RUBER** LINN.  
American Flamingo. [502.]
- [586.] **OLOR CYGNUS** (LINN.) BP.  
European Swan.
- [587.] **OLOR MINOR** (PALL.) BP.  
Bewick's Swan.
588. **OLOR AMERICANUS** (SHARPLESS) BP.  
Whistling Swan. [561a.]
589. **OLOR BUCCINATOR** (RICH.) WAGL.  
Trumpeter Swan. [562.]
590. **CHEN CÆRULESCENS** (LINN.) RIDGW.  
Blue-winged Goose. [564.]
591. **CHEN HYPERBOREUS** (PALL.) BOIE.  
Snow Goose. [563.]
- 591a. **CHEN HYPERBOREUS ALBATUS** (CASS.) RIDG.  
Lesser Snow Goose [563a.]

592. **CHEEN ROSSI** (BAIRD) RIDGW.  
Ross's Snow Goose.
- [593.] **ANSER ALBIFRONS** GMEL.  
European White-fronted Goose.
- 593a. **ANSER ALBIFRONS GAMBELI** (HARTL.) COUES.  
American White-fronted Goose. [565, 566.]
594. **BERNICLA CANADENSIS** (LINN.) BOIR.  
Canada Goose. [567.]
- 594a. **BERNICLA CANADENSIS HUTCHINSI** (SW. & RICH.) RIDGW.  
Hutchins's Goose. [569.]
- 594b. **BERNICLA CANADENSIS LEUCOPARIA** (BRANDT) CASS.  
White-cheeked Goose. [568.]
- 594c. **BERNICLA CANADENSIS OCCIDENTALIS** (BAIRD) DALL & BANN.  
Larger White-cheeked Goose. [567a.]
595. **BERNICLA BRENTA** (PALL.) STEPH.  
Brant. [570.]
596. **BERNICLA NIGRICANS** (LAWR.) CASS.  
Black Brant. [571.]
- [597.] **BERNICLA LEUCOPSIS** (TEMME.) BOIR.  
Barnacle Goose. [572.]
598. **PHILACTE CANAGICA** (SEVAST.) BANNIST.  
Emperor Goose. [573.]
599. **DENDROCYGNA AUTUMNALIS** (LINN.) EYT.  
Black-bellied Tree Duck. [574.]
600. **DENDROCYGNA FULVA** (GMEL.) BURM.  
Fulvous Tree Duck. [575.]
601. **ANAS BOSCAS** LINN.  
Mallard. [576.]
602. **ANAS OBSCURA** GMEL.  
Black Mallard. [577.]
603. **ANAS FULVIGULA** RIDGW.  
Florida Dusky Duck.
604. **CHAULELASMUS STREPERUS** (LINN.) GRAY.  
Gadwall. [584.]
605. **DAFILA ACUTA** (LINN.) BONAP.  
Pintail. [578.]
- [606.] **MARECA PENELOPE** (LINN.) SELBY.  
Widgeon. [586.]
607. **MARECA AMERICANA** (GMEL.) STEPH.  
Baldpate. [585.]

608. **SPATULA CLYPEATA** (LINN.) BOIE.  
Shoveller. [583.]
609. **QUERQUEDULA DISCORS** (LINN.) STEPH.  
Blue-winged Teal. [581.]
610. **QUERQUEDULA CYANOPTERA** (VIEILL.) CASS.  
Cinnamon Teal. [582.]
- [611.] **NETTION CRECCA** (LINN.) KAUP.  
English Teal. [580.]
612. **NETTION CAROLINENSIS** (GMEL.) BAIRD.  
Green-winged Teal. [579.]
613. **AIX SPONSA** (LINN.) BOIE.  
Wood Duck; Summer Duck. [587.]
614. **FULIX MARILA** (LINN.) BAIRD.  
Scaup Duck. [588.]
615. **FULIX AFFINIS** (EYT.) BAIRD.  
Little Blackhead. [589.]
616. **FULIX COLLARIS** (DONOV.) BAIRD.  
Ring-billed Blackhead. [590.]
617. **ÆTHYA VALLISNERIA** (WILS.) BOIE.  
Canvas-back. [592.]
618. **ÆTHYA AMERICANA** (EYT.) BP.  
Redhead. [591.]
619. **CLANGULA ISLANDICA** (GMEL.) BP.  
Barrow's Golden-eye. [594.]
620. **CLANGULA GLAUCIUM AMERICANA** (BP.) RIDGW.  
American Golden-eye. [593.]
621. **CLANGULA ALBEOLA** (LINN.) STEPH.  
Butterball; Bufflehead. [595.]
622. **HISTRIONICUS MINUTUS** (LINN.) DRESSER.  
Harlequin Duck. [596.]
623. **HARELDA GLACIALIS** (LINN.) LEACH.  
Long-tailed Duck; Old Squaw. [597.]
624. **CAMPTOLEMUS LABRADORIUS** (GMEL.) GRAY.  
Labrador Duck. [600.]
625. **POLYSTICTA STELLERI** (PALL.) BRANDT.  
Steller's Duck. [598.]
626. **LAMPRONETTA FISCHERI** BRANDT.  
Spectacled Eider. [599.]
627. **SOMATERIA MOLLISSIMA** (LINN.) BOIE.  
Common Eider.

- 627 a. **SOMATERIA MOLLISSIMA DRESSERI** (SHARPE) COOMBS.  
American Elder. [606.]
628. **SOMATERIA V-NIGRA** GRAY.  
Pacific Elder. [607.]
629. **SOMATERIA SPECTABILIS** (LINN.) BOIE.  
King Elder. [608.]
630. **OEDEMA AMERICANA** SW. & RICH.  
American Scooter. [604.]
- [631.] **MELANETTA FUSCA** (LINN.) BOIE.  
Velvet Scooter.
632. **MELANETTA VELVETINA** (CASS.) BAIRD.  
American Velvet Scooter. [601.]
633. **PELIONETTA PERSPICILLATA** (LINN.) KAUP.  
Surf Duck. [602.]
634. **ERISMATURA RUBIDA** (WILS.) BP.  
Ruddy Duck. [609.]
635. **NOMONYX DOMINICUS** (LINN.) RIDGW.  
Black Masked Duck. [610.]
636. **MERGUS MERGANSER AMERICANUS** (CASS.) RIDGW.  
American Sheldrake. [611.]
637. **MERGUS SERRATOR** LINN.  
Red-breasted Sheldrake. [612.]
638. **LOPHODYTES CUCULLATUS** (LINN.) REICH.  
Hooded Sheldrake. [613.]
639. **TACHYPETES AQUILA** (LINN.) VIEILL.  
Frigate Pelican. [619.]
640. **PELECANUS ERYTHORHYNCHUS** GMEL.  
American White Pelican. [615.]
641. **PELECANUS FUSCUS** LINN.  
Brown Pelican. [616.]
642. **PHALACROCORAX CARBO** (LINN.) BP.  
Common Cormorant. [620.]
643. **PHALACROCORAX DILOPHUS** (SW. & RICH.) NUTT.  
Double-crested Cormorant. [623.]
- 643 a. **PHALACROCORAX DILOPHUS FLORIDANUS** (AUD.) RIDGW.  
Florida Cormorant. [624.]
- 643 b. **PHALACROCORAX DILOPHUS CINCINNATUS** (BRANDT) RIDG.  
White-crested Cormorant. [622.]
644. **PHALACROCORAX MEXICANUS** (BRANDT) SCH. & SALV.  
Mexican Cormorant. [625.]

645. **PHALACROCORAX PENICILLATUS** (BRANDT) HEERM.  
Brandt's Cormorant. [626.]
646. **PHALACROCORAX VIOLACEUS** (GMEL.) RIDGW.  
Violet-green Cormorant. [627.]
- 646a. **PHALACROCORAX VIOLACEUS RESPLENDENS** (AUD.) RIDGW.  
Baird's Cormorant.
647. **PHALACROCORAX BICRISTATUS** PALL.  
Red-faced Cormorant.
648. **PHALACROCORAX PERSPICILLATUS** PALL.  
Pallas's Cormorant. [621.]
649. **PLOTUS ANHINGA** LINN.  
American Anhinga; Snake Bird. [628.]
650. **SULA BASSANA** (LINN.) BRISS.  
Gannet. [617.]
651. **SULA CYANOPS** SUNDEV.  
Blue-faced Gannet.
652. **SULA LEUCOGASTRA** (BODD.) SALV.  
Booby Gannet. [618.]
653. **SULA PISCATOR** (LINN.) BP.  
Red-footed Booby.
654. **PHAETHON FLAVIROSTRIS** BRANDT.  
Yellow-billed Tropic Bird. [629.]
655. **PHAETHON ÆTHEREUS** LINN.  
Red-billed Tropic Bird.
656. **RHYNCHOPS NIGRA** LINN.  
Black Skimmer. [697.]
657. **PAGOPHILA EBURNEA** (PHIPPS) KAUP.  
Ivory Gull. [676, 677.]
658. **RISSA TRIDACTYLA** (LINN.) BP.  
Kittiwake Gull. [672.]
- 658a. **RISSA TRIDACTYLA KOTZBUEI** (BP.) COUES.  
Pacific Kittiwake.
659. **RISSA BREVIROSTRIS** BRANDT.  
Red-legged Kittiwake. [674, 675.]
660. **LARUS GLAUCUS** BRÜNN.  
Glaucous Gull; Burgomaster. [656.]
661. **LARUS LEUCOPTERUS** FABER.  
White-winged Gull. [658.]
662. **LARUS GLAUDESCENS** LICHT.  
Glaucous-winged Gull. [657, 659.]

663. **LARUS MARINUS** LINN.  
Great Black-backed Gull. [662.]
664. **LARUS OCCIDENTALIS** AUD.  
Western Gull. [662.]
- [665.] **LARUS AFFINIS** REINH.  
Siberian Gull.
666. **LARUS ARGENTATUS** BRÜNN.  
Herring Gull.
- 666a. **LARUS ARGENTATUS SMITHSONIANUS** COOM.  
American Herring Gull. [661.]
667. **LARUS CACHINNANS** PALL.  
Pallas's Herring Gull.
668. **LARUS CALIFORNICUS** LAWR.  
Californian Gull. [663.]
669. **LARUS DELAWARENSIS** ORD.  
Ring-billed Gull. [664.]
670. **LARUS BRACHYRHYNCHUS** RICH.  
Short-billed Gull. [664a, 665, 673.]
- [671.] **LARUS CANUS** LINN.  
Mew Gull.
672. **LARUS HEERMANNI** CASS.  
Heermann's Gull. [666.]
673. **LARUS ATRICILLA** LINN.  
Laughing Gull. [667.]
674. **LARUS FRANKLINI** SW. & RICH.  
Franklin's Gull. [668, 669.]
675. **LARUS PHILADELPHIÆ** (ORD) GRAY.  
Bonaparte's Gull. [670.]
676. **RHODOSTETHIA ROSÆ** (MACGILL.) BRUCE.  
Rose's Gull. [678.]
677. **XEMA SABINEI** (J. SABINE) LEACH.  
Sabine's Gull. [680.]
678. **CREAGRUS FURCATUS** (NEA) RY.  
Swallow-tailed Gull. [679.]
679. **STERNA ANGLICA** MONTAG.  
Gull-billed Tern. [681.]
680. **STERNA CASPIA** FALL.  
Caspien Tern. [682.]
681. **STERNA REGIA** GAMB.  
Royal Tern. [683.]

682. **STERNA ELEGANS** GAMB.  
Elegant Tern. [684.]
683. **STERNA CANTIACA ACUFLAVIDA** (CABOT) RIDGW.  
Cabot's Tern. [685.]
684. **STERNA TRUDEAUI** AUD.  
Trudeau's Tern. [687.]
685. **STERNA FORSTERI** NUTT.  
Forster's Tern. [691, 696.]
686. **STERNA FLUVIATILIS** NAUM.  
Common Tern. [689.]
687. **STERNA MACRURA** NAUM.  
Arctic Tern. [690, 693.]
688. **STERNA DOUGALLI** MONTAG.  
Roseate Tern. [692.]
689. **STERNA ALEUTICA** BAIRD.  
Aleutian Tern.
690. **STERNA ANTILLARUM** (LESS.) COUMS.  
Least Tern. [694.]
691. **STERNA FULIGINOSA** GMEL.  
Sooty Tern. [688.]
692. **STERNA ANÆSTHETA** SCOP.  
Bridled Tern.
693. **HYDROCHELIDON LARIFORMIS SURINAMENSIS** (GMEL.) RIDGW.  
Black Tern. [695.]
- [694.] **HYDROCHELIDON LEUCOPTERA** (WEISN. & SCHINZ) BOIE.  
White-winged Black Tern.
695. **ANOUS STOLIDUS** LINN.  
Noddy Tern. [696.]
696. **MEGALESTRIS SKUA** (BRÜNN.) RIDGW.  
Skua Gull. [652.]
697. **STERCORARIUS POMATORHINUS** (TEMM.) VIEILL.  
Pomarine Jaeger. [653.]
698. **STERCORARIUS CREPIDATUS** (BANKS) VIEILL.  
Richardson's Jaeger. [654.]
699. **STERCORARIUS PARASITICUS** (LINN.) SAUNDERS.  
Long-tailed Jaeger. [655.]
700. **DIOMEDEA NIGRIPES** AUD.  
Black-footed Albatross.
701. **DIOMEDEA BRACHYURA** TEMM.  
Short-tailed Albatross. [631.]

- [702.] **DIOMEDHA CULMINATA** GOULD.  
Yellow-nosed Albatross. [632.]
703. **PHOEBETRIA FULIGINOSA** (GMEL.) BP.  
Sooty Albatross. [633.]
704. **OSSIFRAGA GIGANTEA** (GM.) REICH.  
Giant Fulmar. [634.]
705. **FULMARUS GLACIALIS** (LINN.) STEPH.  
Fulmar Petrel. [635.]
- 705a. **FULMARUS GLACIALIS PACIFICUS** (AUD.) BP.  
Pacific Fulmar. [636.]
- 705b. **FULMARUS GLACIALIS RODGERSI** (CASS.) COUES.  
Rodger's Fulmar.
706. **PRIOCELLA TENUIROSTRIS** (AUD.) RIDGW.  
Slender-billed Fulmar. [637.]
707. **PRIOFINUS MELANURUS** (BONN.) RIDGW.  
Black-tailed Shearwater.
- [708.] **PUFFINUS KUHLI** (BOIE) BP.  
Cinereous Shearwater. [651.]
709. **PUFFINUS MAJOR** FABER.  
Greater Shearwater. [647.]
710. **PUFFINUS CREATOPUS** COOPER.  
Pink-footed Shearwater.
- [711.] **PUFFINUS ANGLORUM** TEMM.  
Manx Shearwater. [649.]
712. **PUFFINUS AUDUBONI** FINSCH.  
Dusky Shearwater. [650.]
713. **PUFFINUS GAVIA** (FORST.) FINSCH.  
Black-vented Shearwater.
714. **PUFFINUS FULIGINOSUS** STRICKL.  
Sooty Shearwater. [648.]
715. **PUFFINUS GRISEUS** (GM.) FINSCH.  
Dark-bodied Shearwater.
716. **PUFFINUS TENUIROSTRIS** TEMM.  
Slender-billed Shearwater.
717. **OESTRELATA HESITATA** (TEMN.) COUES.  
Black-capped Petrel. [638.]
- [718.] **OESTRELATA BULWERI** (JARD. & SELBY) COUES.  
Bulwer's Petrel.
- [719.] **DAPTION CAPENSIS** (LINN.) STEPH.  
Pintado Petrel; Cape Pigeon. [639.]



**HALOCYPTENA MICROSUMA** COUES.

Least Petrel.

**PROCELLARIA PELAGICA** LINN.

Stormy Petrel; Mother Carey's Chicken. [645.]

**OCEANITES OCEANICA** (KUHLE) COUES.

Wilson's Petrel. [644.]

**CYMOCHOREA LEUCORRHOEA** (VIEILL.) COUES.

Leach's Petrel. [642.]

**CYMOCHOREA MELANA** (BP.) COUES.

Black Petrel. [643.]

**CYMOCHOREA HOMOCHROA** COUES.

Ashy Petrel.

**OCEANODROMA FURCATA** (GMEL.) BP.

Fork-tailed Petrel. [640.]

**OCEANODROMA HORNBYI** (GRAY) BP.

Hornby's Petrel. [641.]

**FREGETTA GRALLARIA** (VIEILL.) BP.

White-bellied Petrel. [646.]

**HECHMOPHORUS OCCIDENTALIS** (LAWR.) COUES.

Western Grebe. [704.]

**HECHMOPHORUS CLARKI** (LAWR.) COUES.

Clark's Grebe. [705.]

**PODICEPS HOLBÖLLI** REINH.

American Red-necked Grebe. [702, 703a.]

**DYTES AURITUS** (LINN.) RIDGW.

Horned Grebe. [706.]

**DYTES NIGRICOLLIS** (SUND.) RIDGW.

Eared Grebe. [708.]

**DYTES NIGRICOLLIS CALIFORNICUS** (HEERM.) RIDGW.

American Eared Grebe. [707.]

**TACHYBAPTES DOMINICUS** (LINN.) COUES.

St. Domingo Grebe. [708a.]

**PODILYMBUS PODICEPS** (LINN.) LAWR.

Thick-billed Grebe. [709.]

**COLYMBUS TORQUATUS** BRÜNN.

Loon. [698.]

**COLYMBUS ADAMSI** GRAY.

Great White-billed Loon.

**COLYMBUS ARCTICUS** LINN.

Black-throated Diver. [699.]

739. **COLYMBUS PACIFICUS** LAWR.  
Pacific Diver. [700.]
740. **COLYMBUS SEPTENTRIONALIS** LINN.  
Red-throated Diver. [701.]
741. **ALCA IMPENNIS** LINN.  
Great Auk. [710.]
742. **UTAMANIA TORDA** (LINN.) LEACH.  
Razor-billed Auk. [711.]
743. **FRATERCULA ARCTICA** (LINN.) STEPH.  
Common Puffin. [715, 716.]
- 743a. **FRATERCULA ARCTICA GLACIALIS** (LEACH) RIDGW.  
Large-billed Puffin. [714.]
744. **FRATERCULA CORNICULATA** (NAUM.) GRAY.  
Horned Puffin. [713.]
745. **LUNDA CIRRHATA** PALL.  
Tufted Puffin. [712.]
746. **CERATORHINA MONOCHERATA** (PALL.) CASS.  
Horn-billed Puffin. [717, 718.]
747. **PHALARIS PSITTACULA** (PALL.) TEMM.  
Parrot Auk. [725.]
748. **SIMORHYNCHUS CRISTATELLUS** (PALL.) MERRILL.  
Crested Auk. [719, 720.]
749. **SIMORHYNCHUS PYGMÆUS** (GMEL.) RIDGW.  
Whiskered Auk. [721.]
750. **CICERONIA PUSILLA** (PALL.) RIDGW.  
Least Auk. [722, 723.]
751. **PTYCORHAMPHUS ALEUTICUS** (PALL.) BRANDT.  
Cassin's Auk. [724.]
752. **ALLE NIGRICANS** LINK.  
Sea Dove; Dovekie. [738.]
753. **SYNTHLIBORHAMPHUS ANTIQUUS** (GM.) COUES.  
Black-throated Guillemot. [736.]
754. **SYNTHLIBORHAMPHUS WURMIZUSUM** (TEMME.) COUES  
Temminck's Guillemot. [737.]
755. **BRACHYRHAMPHUS MARMORATUS** (GM.) BRANDT.  
Marbled Guillemot. [732, 733.]
756. **BRACHYRHAMPHUS KITTLITZI** BRANDT.  
Kittlitz's Guillemot. [735.]
757. **BRACHYRHAMPHUS HYPOLEUCUS** XANTUS.  
Xantus's Guillemot.

758. **BRACHYRHAMPHUS CRAVERI** (SALVAD.) COUES.  
Craver's Guillemot.
759. **BRACHYRHAMPHUS BRACHYPTERUS** BRANDT.  
Short-winged Guillemot. [734.]
760. **URIA GRYLLE** (LINN.) BRÜNN.  
Black Guillemot. [726.]
761. **URIA COLUMBA** (PALL.) CASS.  
Pigeon Guillemot. [727.]
762. **URIA CARBO** (PALL.) GRAY.  
Sooty Guillemot. [728.]
763. **LOMVIA TROILE** (LINN.) BRANDT.  
Common Guillemot. [729, 730.]
- 763a. **LOMVIA TROILE CALIFORNICA** (BRYANT) COUES.  
California Guillemot.
764. **LOMVIA ARRA** (PALL.) BP.  
Thick-billed Guillemot.
- 764a. **LOMVIA ARRA BRUNNICHII** (SCH.) RIDGW.  
Brunnich's Guillemot. [731.]



## APPENDIX.

The following tables are intended as a condensed analysis of the changes which have taken place in North American ornithology since 1859, with other items of interest in the same connection.

### a. Species eliminated from the catalogue of 1859.

Catalogue No.

4. CATHARTES BURROVIANUS, Cassin *Not North American?*
6. FALCO NIGRICEPS, Cassin = No. 414.
16. ACCIPITER MEXICANUS, Swains. = No. 431.
19. BUTEO BAIRDII, Hoy = No. 442, *young*.
21. BUTEO INSIGNATUS, Cassin = No. 442, *melanistic*.
24. BUTEO MONTANUS, Nuttall = No. 436b, *lighter phase*.
25. BUTEO OXYPTERUS, Cassin = No. 442, *young*.
30. ARCHIBUTEO LAGOPUS, Gray = No. 447, *light phase*.
40. HALIAETUS PELAGICUS, Siebold. *Not North American*.
41. HALIAETUS WASHINGTONII, Jard. = No. 451, *young female*.
56. NYCTALE ALBIFRONS, Cassin = No. 401, *young*.
59. ATHENE CUNICULARIA, Bon. The true *cunicularia* is a South American form.\*
66. CROTOPHAGA RUGIROSTRIS, Sw. = No. 389.
73. CAMPEPHILUS IMPERIALIS, Gray. *Not North American*.
88. SPHYROPICUS WILLIAMSONII, Baird = No. 370, *adult male*.
100. LAMPORNIS MANGO, Swains. *Not North American*. [= *L. violicauda* (Bodd.) Ell.]
129. TYRANNUS MELANCHOLICUS, Vieill. *Not North American*.
- 167a. Var. MNIOTILTA LONGIROSTRIS, Baird.†
171. GEOTHLYPIS VELATUS, Cab. *Not North American*.
215. MYODIOCTES BONAPARTEI, Aud. = No. 127, *young*.
239. COLLYRIO ELEGANS, Baird. An Asiatic species (*Lanius lahtora*, Sykes.).
242. VIREO VIRESCENS, Vieill. = No. 135†
- 253a. Var. MIMUS CAUDATUS, Baird. Not separable from *polyglottus*.
- 259a. HARPORHYNCHUS VETULA, Baird = No. 15.
- 261a. HARPORHYNCHUS LONGICAUDA, Baird. Scarcely separable from *rufus*.
272. TROGLODYTES AMERICANUS, Aud. = No. 63.
- 289a. Var. PARUS ALBESCENS, Baird = No. 41a.
309. CARPODacus HAEMORRHIOUS, Wagl. *Not North American?*
311. CHRYSOMITRIS STANLEYI, Bonap. *Not North American*. [= *C. BARBATA* (Mol.).]
312. CHRYSOMITRIS YARRELLI, Bonap. *Not North American*.
324. LEUCOSTICTE ARCTOUS, Bonap. No sufficient evidence of occurrence in North America.
329. PLECTROPHANES MELANOMUS, Baird = No. 189.
365. MELOSPIZA GOULDII, Baird = No. 231c.
405. TRUPIALIS MILITARIS, Bonap. *Not North American*.

\* There appears to be but a single race inhabiting North America.

† While there is undoubtedly a very appreciable difference between specimens of *M. varia* from the West Indies and those from the interior of Eastern North America in the length of the bill, it is the small-billed form which should receive a new name, since Linnaeus's name *varia* was based upon the bird of the South Atlantic States and West Indies. If to be regarded as separable, the name *borealis*, Nutt., may be applied to the western birds.

## Catalogue No.

424. *CORVUS CACALOTL*, Wagl. = No. 280.  
 470. *LAGOPUS AMERICANUS*, Aud. = No. 475.  
 482. *DEMIEGRETTA PEALII*, Baird = No. 491, *white phase*.  
 486a. *HERODIAS EGRETTE* v. *CALIFORNICA* = No. 489.  
 488. *ARDEA WURDEMANNI*, Baird = No. 486, *colored phase*.  
 494. *BUTORIDES BRUNNESCENS*, Baird. *Not North American*.  
 514. *HAEMATOPUS ATER*, Vieillot. *Not North American*.  
 566. *ANSER FRONTALIS*, Baird = No. 593a, *young*.  
 603. *PELIONETTA TROWBRIDGII*, Baird = No. 633.  
 605. *OIDEMIA BIMACULATA*, Baird = No. 632, *young*.  
 630. *DIOMEDEA EXULANS*, Linn. *Not North American*.  
 659. *LARUS CHALCOPHTERUS*, Lawr. = No. 662.  
 665. *LARUS SUCKLEYI*, Lawr. = No. 670, *young*.  
 669. *CHROICOCEPHALUS CUCULLATUS*, Br. = No. 674, *young, second year*.  
 671. *CHROICOCEPHALUS MINUTUS*, Bruch. *Not North American*.  
 673. *RISSA SEPTENTRIONALIS*, Lawr. = No. 670, *adult*.  
 675. *RISSA NIVEA*, Bruch = No. 669.  
 677. *PAGOPHILA BRACHYTARSI*, Hölz. = No. 657.  
 686. *STERNA HAVELLI*, Aud. = No. 685, *winter plumage*.  
 693. *STERNA PIKEI*, Lawr. = No. 687, *young*.  
 703. *PODICEPS CRISTATUS*, Lath. *Not North American?*  
 703a. *PODICEPS COOPERI*, Lawr. = No. 731, *young*.  
 716. *SAGMATORHINA LABRADORIA*, Cas. = No. 745, *young*.  
 718. *CERORHINA SUCKLEYI*, Cassin = No. 746, *young*.  
 720. *PHALERIS TETRACULA*, Stephens = No. 748, *winter dress*.  
 722. *PHALERIS MICROCEROS*, Brandt = No. 750, *summer dress*.  
 730. *URIA RINGVIA*, Brünnich = No. 763, *individual phase*.  
 733. *BRACHYRHAMPHUS WRANGELII*, Br. = No. 755, *winter dress*.

Seven of the above are included in Coues's "Check List of North American Birds" (1873), viz, numbers 88, 100, 309, 488, 563a, 603, 693, and 703; the equivalent numbers of the "Check List" being, respectively, 305, 274, 141a, 450, 480a, 518a, 568, and 609—some of them bearing a different name from that given in the Smithsonian catalogue. Besides the foregoing, there are given in the "Check List" the following untenable names:

- 146a. *ÆGIOTHUS LINARIA* (L.) Cab. rar. *FUSCESCENS*, Cs. = No. 179, *midsummer dress*.  
 157bis. *CENTRONYX OCHROCEPHALUS*, Aiken = No. 191, *autumnal plumage*.  
 [187.] *PASSER DOMESTICUS*, Linn. *An introduced species*.  
 215a. *ISTERUS SPURIUS* (L.) Bp. rar. *AFFINIS*, Lawr. *Not separable from I. spurius*.  
 [283.] *AGYRTIA LINNÆI* (Bp.) —. *Not North American*. [= *A. tobaci* (Gm.) Ell.]  
 374a. *CHAMÆPELIA PASSERINA* (L.) Sw. rar. *PALLESCENS*, (Bd.) Cs. *Untenable race*.  
 445ter [appendix]. *IBIS THALASSINUS*, Ridg. = No. 504, *young*.

b. *Species and races described or added to the North American fauna since 1859 \**

6. *Turdus iliacus*, Linn.—Cf. REINHARDT, Ibis, 1861, 6. (Greenland; two examples.)  
 7a. *MERULA MIGRATORIA PROPINQUA*, Ridgw.—*Turdus migratorius propinquus*, Bull. Nutt. Orn. Club, ii. Jan. 1877, 9. (Western U. S.)  
 8. *MERULA CONFINIS*, Baird.—*Turdus confinis*, Review Am. B. i. 1864, 29. (Todes Santos, Cape St. Lucas.)  
 14. *HARPORHYNCHUS CINEREUS*, Xantus.—Proc. Philad. Acad. 1859, 298. (Cape St. Lucas.)  
 14a. *HARPORHYNCHUS CINEREUS BENDIREI*, Coues.—Am. Nat. vii. June, 1873, 330, fig. 69. (Tucson, Arizona; C. Bendire.)

\* The new forms are in small capitals, the other additions in italics. In order to reduce the number of references to a minimum, only the original description, or the first North American record of a species is given. In some cases we have not been able to quote the first reference, but have done so whenever practicable.

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- 15a. *HARPORHYNCHUS CURVIROSTRIS PALMERI*, Ridgw.—*H. curvirostris*, var. *palmeri*, Ridgw. in Cones's Key, 1872, 351. (Arizona.)
18. *HARPORHYNCHUS GRAYSONI*, Baird.—*Cf.* LAW. Ann. Lyc. N. Y. x. Feb. 1871, —. (Socorro I.)
20. *Cyanecula suecica* (Linn.) Brehm.—*Cf.* ADAMS, Ibis, 1878, 422. (St. Michael's, Alaska; seven examples.)
31. *REGULUS OBSCURUS*, Ridgw.—*R. calendula obscurus*, Bull. U. S. Geol. & Geog. Surv. Terr. ii. No. 2, Apr. 1, 1876, 184. (Guadalupe I., Lower California.)
- 33a. *REGULUS SATRAPA OLIVACEUS*, Baird.—*R. satrapa*, var. *olivaceus*, Baird, Review Am. Birds, i. July, 1864, 65 (in text). (Western United States.)
34. *Phylloscopus borealis* (Blas.) Dress.—*Phyllopneuste kennicotti*, Baird, Trans. Chicago Acad. i. 1869, 313, pl. 30, fig. 2. (St. Michael's, Alaska.)
44. *Parus cinctus*, Bodd.—*P. sibiricus* (Gm.) Ridgw. Bull. Nutt. Orn. Club, ii. Jan. 1878, 37. (St. Michael's, Alaska; L. M. Turner.)
- 46a. *PARUS RUFESCENS NEGLECTUS*, Ridgw.—*P. rufescens*, β, *neglectus*, Proc. U. S. Nat. Mus. i. Apr. 25, 1879, 485. (Coast California.)
57. *CAMPYLORHYNCHUS AFFINIS*, Xantus.—Proc. Philad. Acad. 1859, 298. (Cape St. Lucas.)
- 58a. *SALPINCTES OBSOLETUS GUADALUPENSIS*, Ridgw.—Bull. U. S. Geol. & Geog. Surv. Terr. ii. No. 2, Apr. 1, 1876, 185. (Guadalupe I., Lower California.)
- 59a. *CATHERPES MEXICANUS CONSPERSUS*, Ridgw.—*C. mexicanus*, var. *conspersus*, Ridgw. Am. Nat. Oct. 1873, 602. (Middle Province of U. S.)
- 60b. *THRYOTHORUS LUDOVICIANUS MIAMENSIS*, Ridgw.—*T. ludovicianus* (Lath.) var. *miamensis*, Am. Nat. ix. Aug. 1875, 469. (Miami River, E. Florida.)
- 61a. *THRYOMANES BEWICKI SPILURUS* (Vig.) Baird.—Review Am. Birds, i. 1864, 126. (Pacific slope of United States.)
- 61b. *THRYOMANES BEWICKI LEUCOGASTER*, Baird.—Review Am. B. i. 1864, 127. (Southern border of U. S.)
62. *THRYOMANES BREVICAUDA*, Ridgw.—Bull. U. S. Geol. & Geog. Surv. Terr. ii. No. 2, Apr. 1, 1876, 186. (Guadalupe I., Lower California.)
64. *TROGLODYTES INSULARIS*, Baird.—*Cf.* LAW. Ann. Lyc. N. Y. x. Feb. 1871, 3, (Socorro I.)
- 65a. *ANORTHURA TROGLODYTES PACIFICUS*, Baird.—*T. hyemalis*, var. *pacificus*, Review Am. B. i. 1864, 145. (Pacific coast U. S.)
66. *ANORTHURA ALASCENSIS*, Baird.—*Troglodytes alascensis*, Trans. Chicago Acad. i. 1869, 315, pl. 30, fig. 3. (St. George's Island, Alaska; W. H. Dall.)
- 67a. *TELMATODYTES PALUSTRIS PALUDICOLA*, Baird.—*Cistothorus palustris*, var. *paludicola*, Review Am. B. i. 1864, 148. (Pacific coast U. S.)
69. *Motacilla alba*, Linn.—*Cf.* REINHARDT, Ibis, 1861, 6. (Greenland.)
70. *Budytes flava* (Linn.) Gray.—*Cf.* BAIRD, Trans. Chicago Ac. i. 1869, 3, pl. 30, fig. 1. (St. Michael's, Alaska; Pease & Bannister.)
72. *Anthus pratensis* (Linn.) Bechst.—*Cf.* PAULSEN, ed. Hülbboll, Faun. Grönl. 1846, 24; REINH. Ibis, 1861, 6 (Greenland); B. B. & R. Hist. N. Am. B. i. 1874, 173. (St. Michael's, Alaska.)
- 74a. *Mniotilta varia borealis* (Nutt.) Ridgw. [See p. 213, foot-note.]
80. *HELMINTHOPHAGA LAWRENCEI*, Herrick.—Proc. Philad. Acad. 1874, 220, pl. xv. (New Jersey.)
82. *HELMINTHOPHAGA LEUCOBONCHIALIS*, Brewster.—Am. Sportsman, v. Oct., 1874; Bull. Nutt. Orn. Club, i. 1876, 1, plate. (Massachusetts.)
83. *HELMINTHOPHAGA LUCIÆ*, Cooper.—Proc. Calif. Acad. Sci. July, 1861, 120. (Ft. Mojave, California.)
- 86a. *HELMINTHOPHAGA CELATA LUTESCENS*, Ridgw.—*H. celata*, var. *lutescens*, Ridgw.: Am. Jour. Sci. & Arts, third ser. iv. Dec. 1872, 457. (Pacific coast U. S.)
89. *PARULA PITIAYUMI INSULARIS* (Lawr.) Ridgw.—*Parula insularis*, LAW. Ann. Lyc. N. Y. x. Feb. 1871. (Socorro I., N. W. Mexico.)

## Catalogue No.

- 89a. PARULA PITIAYUMI NIGRILORA, Coues.—*P. nigrilora*, Bull. U. S. Geol. & Geog. Surv. Terr. iv. 1878, 11. (Hidalgo, Texas; G. B. Sennett.)
92. *Peucedramus olivaceus* (Giraud) Coues.—*Sylvia olivacea*, Giraud, Texan Birds, 1841, 14, pl. vii. fig. 2. ("Texas.")—*Dendroica olivacea*, HENSH. Am. Sportsman, v. 328, Feb. 20, 1875; Orn. Wheeler's Exp. 1875, 202. (S. Arizona.)
- 103a. DENDROICA DOMINICA ALBILORA, Baird.—*D. dominica*, var. *albilora*, Am. Nat. vii. Oct. 1873, 605. (Mississippi Valley, south to Guatemala and Honduras.)
104. DENDROICA GRACILE, Coues.—*Cf. BAIRD*, Review Am. B. i. 1864, 210. (Ft. Whipple, Arizona; Coues.)
106. DENDROICA CHRYSOPARIA, Sci. & Salv.—*Cf. BAIRD*, Review Am. B. i. 1864, 186, foot-note. (San Antonio, Texas; Heermann.)
- 113a. DENDROICA PALMARUM HYPOCHRYSEA, Ridgw.—Bull. Nutt. Orn. Club, Nov. 1876, 84, 85. (Atlantic States.)
- 116a. SIURUS NEVIUS NOTABILIS, Grinnell.—*Cf. RIDGW.* Proc. U. S. Nat. Mus. iii. March 27, 1880, 12. (Black Hills, Wyoming.)
- 125a. MYIODIOCTES PUSILLUS PILEOLATUS (Pall.) Ridgw.—*Myiodioctes pusillus*, var. *pileolata*, RIDGW. Am. Jour. Sci. & Arts, iv. Dec. 1872, 457; Am. Nat. vii. Oct. 1873, 607. (Pacific coast N. Am.)
131. *Cardellina rubrifrons* (Giraud) Sci.—*Muscioapa rubrifrons*, Giraud, Texan Birds, 1841, pl. vii. fig. 1. ("Texas.")—*Cardellina rubrifrons*, HENSHAW, Orn. Wheeler's Exp. 1875, 211. (Arizona.)
133. *Basileuterus culicivorus* (Licht.) Bp.—*Muscioapa brasieri*, Giraud, Texan Birds, 1841, pl. vi. fig. 2.
134. *Basileuterus belli* (Giraud) Sci.—*Muscioapa belli*, Giraud, Texan Birds, 1841, pl. iv. fig. 1.
- 139a. VIREOSYLVA GILVA SWAINSONI, Baird.—*Vireo swainsoni*, Baird, B. N. Am. 1858, 336, in text. (Pacific coast U. S.)
- 141b. LANIVIREO SOLITARIUS PLUMBEUS (Coues) Allen.—*Vireosylva plumbea*, Coues, Proc. Philad. Acad. 1866, 73. (Ft. Whipple, Arizona.)
146. VIREO PUSILLUS, Coues.—Proc. Philad. Acad. 1866, 76. (Date Creek, Arizona.)
147. VIREO VICINIOR, Coues.—Proc. Philad. Acad. 1866, 75. (Ft. Whipple, Arizona.)
- 149b. LANIUS LUDOVICIANUS ROBUSTUS, Baird.—*Collurio Ludovicianus*, var. *robustus*, Am. Nat. vii. Oct. 1873, 608. (California?)
- 164a. PYRANGA AESTIVA COOPERI, Ridgw.—*Pyranga cooperi*, Proc. Philad. Acad. 1869, 130. (S. W. United States.)
167. PYRRHULA CASSINI, Baird.—*P. coccinea*, var. *cassini*, Trans. Chicago Acad. i. 1869, 316, pl. 29, fig. 1. (Nulato, Alaska; W. H. Dall.)
- 170a. *Carpodacus frontalis rhodocolpus* (Caban.) Ridgw.—*Cf. RIDGW.* Am. Jour. Sci. & Arts, v. Jan. 1873, 39. (Coast of California.)
171. CARPODACUS AMPLUS, Ridgw.—Bull. U. S. Geol. & Geog. Surv. Terr. ii. No. 2, Apr. 1, 1876, 187. (Guadalupe I., Lower Cal.; E. Palmer.)
- 175a. LEUCOSTICTE TEPHROCOTIS LITTORALIS (Baird) Ridgw.—*L. littoralis*, Baird, Trans. Chicago Acad. i. 1869, 318, pl. 28, fig. 1. (Sitka, Alaska.)
176. LEUCOSTICTE ATRATA, Ridgw.—Am. Sportsman, July 18, 1874, 241. (Colorado; C. A. Aiken.)
177. LEUCOSTICTE AUSTRALIS, Allen.—*L. tephrocotis*, var. *australis*, Allen. *Cf. RIDGW.* Bull. Essex Inst. v. Nov. 1873, 189. (Mt. Lincoln, Colorado.)
- 178a. ÆGIOTHUS CANESCENS EXILIPES (Coues) Ridgw.—*Ægiothus exilipes*, COUES, Proc. Philad. Acad. Nov. 1861, 345. (Arctic America.)
- 179a. *Ægiothus linaria holböllii* (Brehm) Ridgw.—*Linaria holböllii*, BREHM, Vög. Deutschl.
180. ÆGIOTHUS BREWSTERI, Ridgw.—*Ægiothus (flaviostris var.) brewsteri*, Ridgw. Am. Nat. July, 1872, 433. (Waltham, Mass.)
- 182a. ASTRAGALINUS PSALTRIA ARIZONÆ (Coues) Ridgw.—*C. mexicana*, var. *arizonæ*, Coues, Proc. Philad. Acad. 1866, 82. (Ft. Whipple, Arizona.)



ague No.

- PASSERCULUS PRINCEPS, Maynard.—Am. Nat. vi. 1872, 637. (Ipswich, Mass.)  
 PASSERCULUS GUTTATUS, Lawr.—Am. Lyc. N. Y. viii. 1867, 473 (Cape St. Lucas).  
*Cf.* COOPER, Orn. Cal. i. 1870, 185.  
 1. *Peoetes gramineus confinis*, Baird.—*P. gramineus*, var. *confinis*, Baird, B. N. Am. 1858, 448, in text. (Western U. S.)  
 1. COTURNICULUS PASSERINUS PERPALLIDUS, Ridgw.—*C. passerinus*, var. *perpallidus*, Ridgw. in Coues's "Key", 1872, 137. (Western U. S.)  
 1. AMMODROMUS CAUDACUTUS NELSONI, Allen.—Proc. Boston Soc. xvii. March, 1875, 93. (N. E. Illinois.)  
 AMMODROMUS NIGRESCENS, Ridgw.—*A. maritimus*, var. *nigrescens*, Ridgw. Bull. Essex Inst. Dec. 1873, 198. (Indian R., Florida.)  
 1. *Chondestes grammica strigata* (Sw.) Ridgw.

Mr. H. K. Coale, of Chicago, Ill., has lately called my attention to certain differences between eastern (typical) and western specimens of this species, which, upon examination of a large series, I find to be quite constant and sufficiently appreciable to warrant the recognition of a western race. Western birds being exactly like those from Mexico in those points in which they differ from eastern specimens, Swainson's name *strigatus* (*Chondestes strigatus*, Philow. Jour. i. 1837, 435), based upon the Mexican bird, is available for the western and southern race.

1. ZONOTRICHIA GAMBELI INTERMEDIA, Ridgw.—*Z. leucophrys*, var. *intermedia*, RIDGW. Bull. Essex Inst. Dec. 1873, 198. (Middle Province of U. S., north to Alaska.)  
 1. SPIZELLA SOCIALIS ARIZONÆ, Coues.—*S. socialis*, var. *arizonæ*, COUES, Key, 1872, 143. (Ft. Whipple, Arizona.)  
 1. JUNCO AIKENI, Ridgw.—*J. hyemalis*, var. *Aikeni*, RIDGW. Am. Nat. Oct. 1873, 612, 614. (Mts. of Colorado; C. E. Aiken.)  
 1. JUNCO ANNECTENS, Baird.—Orn. Cal. i. 1870, 564. (Rocky Mts., Ft. Bridger to Arizona and New Mexico.)  
 1. JUNCO INSULARIS, Ridgw.—Bull. U. S. Geol. & Geog. Surv. Terr. ii. No. 2, Apr. 1, 1876, 188. (Guadalupe I., Lower Cal.; E. Palmer.)  
 1. AMPHISPIZA BELLII NEVADENSIS, Ridgw.—*Pooospiza bellii*, var. *nevadensis*, Ridgw. Bull. Essex Inst. Nov. 1873, 191. (Middle Province of U. S.)  
 1. PEUCEAÆ AESTIVALIS ILLINOENSIS, Ridgw.—*P. illinoensis*, Bull. Nutt. Orn. Club, Oct. 1879, 219. (Texas to S. Illinois.)  
 1. PEUCEAÆ ARIZONÆ, Ridgw.—*P. aestivalis*, var. *Arizonæ*, RIDGW. Am. Nat. Oct. 1873, 615. (S. Arizona.)  
 1. PEUCEAÆ CARPALLIS, Coues.—Am. Nat. vii. June, 1873, 322. (Tucson, Arizona; C. Bendire.)  
 1. PEUCEAÆ RUFICEPS BOUCARDI (Scl.) Ridgw.—*Cf.* HENSHAW, Orn. Wheeler's Exp. 1874, 117. (S. Arizona and S. New Mexico.)  
 1. *Melospiza fasciata guttata* (Nutt.) Ridgw.

This is the "*M. rufina*" of the old catalogue. The true *M. rufina* (Brandt) is a larger and darker form from Sitka, rediscovered since the publication of "Birds of North America" (1858).

1. *Melospiza fasciata rufina* (Brandt) Ridgw.—*Cf.* B. B. & R. Hist. N. Am. B. ii. 1874, 29. (British Columbia to Sitka.)  
 1. *Melospiza cinerea* (Gmel.) Ridgw.—"*M. insignis*", BAIRD, Trans. Chicago Acad. i. 1869, 319, pl. 29, fig. 2. (Kadiak, Alaska; F. Bischoff.)  
 1. PIPILO ERYTHROPHthalmus ALLENI, Coues.—*P. alleni*, COUES, Am. Nat. v. Aug. 1871, 366. (Florida.)  
 1. PIPILO MACULATUS CONSOBRINUS, Ridgw.—Bull. U. S. Geol. & Geog. Surv. Terr. ii. No. 2, Apr. 1, 1876, 189. (Guadalupe I., Lower Cal.)  
 1. PIPILO MACULATUS CARMANI (Lawr.) Ridgw.—*Pipilo carmani*, LAW. Ann. Lyc. N. Y. x. 1871. 7. (Socorro I., N. W. Mexico.)

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- 240a. *PIPILO FUSCUS ALBIGULA* (Baird) Ridgw.—*P. albigula*, BAIRD, Proc. Philad. Acad. Nov. 1859, 305. (Cape St. Lucas.)
- 242a. *CARDINALIS VIRGINIANUS IGNEUS*, Baird.—*C. igneus*, BAIRD, Proc. Philad. Acad. Nov. 1859, 305. (Cape St. Lucas.)
253. *Phonipara zena* (Linn.) Bryant.—*Cf.* B. B. & R. Hist. N. Am. B. ii. 1874, 93. (Key West, Florida; H. W. Henshaw.)
- 258a. *Molothrus ater obscurus* (Gmel.) Coues.—*M. obscurus*, CASS. Proc. Philad. 1866, 18. (Lower California.)
259. *Molothrus aeneus* (Wagl.) Cab.—*Cf.* MERRILL, Bull. Nutt. Orn. Club, i. July, 1876, 88. (Ft. Brown, Texas.)
- 263a. *STURNELLA MAGNA MEXICANA* (Sci.) Ridgw.—*Cf.* BREWER, Bull. Nutt. Orn. Club, iii. July, 1878, 152. (Ft. Brown, Texas; J. C. Merrill.)
276. *Quiscalus palustris* (Swains.) Cassin.—“*Q. major*”, GAMBEL, Jour. Philad. Acad. i. 1847, 47. (Gulf of California.)\*
- 278b. *QUISCALUS VERSICOLOR AENEUS*, Ridgw.—*Q. aeneus*, Ridgw. Proc. Philad. Acad. 1869, 134. (Mississippi Valley, Hudson's Bay Terr., Maine, etc.)
- [279.] *Sturnus vulgaris*, Linn.—*Cf.* REINHARDT, Ibis, 1861, 7. (Greenland.)
- 290a. *CYANOCITTA STELLERI FRONTALIS*, Ridgw.—*Cyanura stelleri*, var. *frontalis*, RIDGW. Am. Jour. Sci. & Arts, third ser. v. Jan. 1873, 41, 43. (Sierra Nevada, California.)
- 290b. *CYANOCITTA STELLERI ANNECTENS*, Baird.—*Cyanura stelleri*, var. *annectens*, Baird, in B. B. & R. Hist. N. Am. Birds, ii. 1874, 281, in text. (Northern Rocky Mts.)
- 297a. *PERISOREUS CANADENSIS CAPITALIS*, Baird.—*P. canadensis*, var. *capitalis*, BAIRD, Bull. Essex Inst. v. Nov. 1873, 193. (Rocky Mountains.)
- 297b. *PERISOREUS CANADENSIS FUMIFRONS*, Ridgw.—Proc. U. S. Nat. Mus. iii. March 27, 1880, 5. (Coast of Alaska.)
298. *PERISOREUS OBSCURUS*, Ridgw.—*P. canadensis*, var. *obscurus*, RIDGW. Bull. Essex Inst. Nov. 1873, 194. (Northwest coast of U. S.)
- [299.] *Alauda arvensis*, Linn.—*Cf.* DRESSER & SHARPE, Birds Eur. pt. —, and B. B. & R. Hist. N. Am. B. ii. 1874, 136. (Greenland and Bermuda.)
- 300a. *EREMOPHILA ALPESTRIS LEUCOLEMA*, Coues.—Birds N. W. 1874, 38. (Interior plains N. Am.)
- 300b. *Eremophila alpestris chrysolæma* (Wagl.) —.—*E. cornuta*, var. *chrysolæma*, BAIRD, B.N. Am. 1858, 403, in text. (Southwestern U. S.)
308. *Pitangus derbianus* (Kaup) Sci.—*P. derbianus*, COUES, The Country, July 13, 1878, 184. (Lomita, Texas; G. B. Sennett.)
309. *Myiozetetes texensis* (Giraud) Sci.—*Muscicapa texensis*, GIRAUD, Texan Birds, 1841, pl. i. (“Texas.”)
310. *Myiodynastes luteiventris*, Bonap.—*Cf.* HENSHAW, Orn. Wheeler's Exp. 1875, 346, pl. xiv. (S. Arizona.)
319. *Contopus pertinax*, Cab. & Hein.—*Cf.* COUES, Proc. Philad. Acad. 1866, 60. (Ft. Whipple, Arizona.)
329. *Empidonax fulvifrons* (Giraud) Sci.—*Muscicapa fulvifrons*, GIRAUD, Texan Birds, 1841, pl. ii. (“Texas.”)
- 329a. *EMPIDONAX FULVIFRONS PALLESCENS* (Coues) Ridgw.—*Mitrephorus pallens*, COUES, Proc. Philad. Acad. 1866, 63. (Ft. Whipple, Arizona.)
331. *Ornithion imberbe* (Sci.) Coues.—“*O. incanescens*”, COUES, The Country, July 13, 1878, 184. (Lomita, Texas; G. B. Sennett.)
334. *Eugenes fulgens* (Sw.) Gould.—*Cf.* HENSHAW, Am. Nat. Apr. 1874, 241; Orn. Wheeler's Exp. 1875, 379. (Mt. Graham, Arizona.)
341. *SELASPHORUS ALLENI*, Henshaw.—Bull. Nutt. Orn. Club, ii. 1877, 54. (Coast of California.)

\* The National Museum possesses an example of what is apparently this species from the coast of Louisiana.

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341. *Atthis hololeuca* (Less. & Del.) Rich.—*Cf.* ELLIOT, Illustr. Am. B. i. 1869, xxi. xii. plate. (El Paso, Texas; J. H. Clarke.)
342. *Stelula calliope*, Gould.—*Calothorax calliope*, XANTUS, Proc. Philad. Acad. 1859, 190. (Ft. Tejon, Cal.)
343. *Calothorax lucifer* (Sw.) Gray.—“*Doricha enicura*”, HENSH. Am. Sportsman, v. 328, Feb. 20, 1875; Orn. Wheeler's Exp. 1875, 381. *Cf.* LAW. Bull. Nutt. Orn. Club, ii. Oct. 1877, 108. (Camp Bowie, Arizona.)
345. *Amasilia fuscolaudata* (Fras.) Ridgw.—“*Pyrrophæna riefferi*”, MERRILL, Bull. Nutt. Orn. Club, i. Oct. 1876, 88. (Ft. Brown, Texas.) *Cf.* RIDGW. Proc. U. S. Nat. Mus. i. 1878, 147 (synonymy and diagnosis).
346. *Amasilia cerviceiventris*, Gould.—“*A. cerviceiventris*”, MERRILL, Bull. Nutt. Orn. Club, ii. Jan. 1877, 26. (Ft. Brown, Texas.) *Cf.* RIDGW. Proc. U. S. Nat. Mus. i. 1878, 148 (synonymy and diagnosis).
347. *BASILINNA XANTUSI* (Lawr.) Elliot.—*Amasilia xantusi*, LAW. Ann. N. Y. Lyc. vii. April, 1860, 109 (= ♀).—*Heliopædica castaneocauda*, LAW. t. c. 145 (= ♂). (Cape St. Lucas.)
348. *Iache latirostris* (Sw.) Elliot.—*Circe latirostris*, HENSH. Am. Sportsman, v. Feb. 20, 1875; Orn. Wheeler's Exp. 1875, 380. (Chiricahua Mts., S. Arizona.)
- 349a. *Chordeiles popetue minor* (Cab.) Ridgw.—*Cf.* B. B. & R. Hist. N. Am. B. iii. 1874, 520. (Miami, Florida; C. J. Maynard.)
- 350a. *Picus villosus leucomelas* (Bodd.) Ridgw.—*Picus leucomelas*, Bodd. Tabl. P. E. 1783 (ex. Pl. Enlum. 345, fig. 1 = ♀ ad.).
- 353a. *PICUS SCALARIS LUCASANUS* (Xant.) Coues.—*P. lucasanus*, XANTUS, Proc. Philad. Acad. 1859, 298, 302. (Cape St. Lucas.)
355. *Picus stricklandi*, Malh.—*Cf.* HENSHAW, Am. Sportsman, v. 328, Feb. 20, 1875; Orn. Wheeler's Exp. 1875, 389. (S. Arizona.)
- 377a. *MELANERPES FORMICIVORUS ANGUSTIFRONS*, Baird.—*M. formicivorus*, var. *angustifrons*, BAIRD, Orn. Cal. i. 1870, 405. (Cape St. Lucas.)
380. *COLAPTES RUFIPILEUS*, Ridgw.—*C. mexicanus rufipileus*, Bull. Geog. & Geol. Surv. Terr. ii. No. 2, Apr. 1, 1876, 191. (Guadalupe I., Lower Cal.)
390. *Crotophaga sulcirostris*, Swains.—*Cf.* COUES, The Country, July 13, 1878, 184. (Lomita, Texas; G. B. Sennett.)
393. *CONURUS HOLOCHLORUS BREVIPES*, Baird.—*Conurus holochlorus*, var. *brevipes*, “Baird, MS.”, LAW. Ann. Lyc. N. Y. x. 1871, —. (Socorro I.)
- 397a. *STRIX NEBULOSA ALLENI*, Ridgw.—Proc. U. S. Nat. Mus. iii. March 27, 1880, —. (Clearwater, S. Florida.)
398. *STRIX OCCIDENTALIS* (Xant.) Ridgw.—*Syrnium occidentale*, XANTUS, Proc. Philad. Acad. 1859, 193. (Ft. Tejon, Cal.)
- 399a. *Ulula cinerea lapponica* (Retz.) Ridgw.—*Syrnium lapponicum*, RIDGW. Bull. Nutt. Orn. Club, iii. Jan. 1878, 37. (St. Michael's, Alaska; L. M. Turner.)
- 402a. *SCOPS ASIO FLORIDANUS*, Ridgw.—*S. asio*, var. *floridanus*, RIDGW. Bull. Essex Inst. Dec. 1873, 200. (Florida.)
- 402c. *SCOPS ASIO MAXWELLIÆ*, Ridgw.—*S. asio*, e. *maxwelliæ*, RIDGW. Field & Forest, June, 1877, 210, 213. (Boulder Co., Colorado.)
- 402d. *SCOPS ASIO KENNICOTTI*, (Elliot) Coues.—*S. Kennicottii*, ELLIOT, Proc. Philad. Acad. 1867, 69; Illustr. Am. B. 1869, pl. 11. (Sitka, Alaska; F. Bischoff.)
403. *Scops trichopsis*, Wagl.—“*S. asio*, var. *maccalli*”, B. B. & R. Hist. N. Am. B. iii. 1874, 52. (New Mexico.)
404. *Scops flammeolus* (Licht.) Sc.—*Cf.* COOPER, Orn. Cal. i. 1870, 422. (Ft. Crook, N. California.)
- 405a. *Bubo virginianus subarcticus* (Hoy) Ridgw.—*Bubo subarcticus*, Hoy, Proc. Philad. Acad. vi. 1852, 211. (Wisconsin.) [=“var. *arcticus*” of Hist. N. Am. B. iii. 1874, 64.]
- 405b. *Bubo virginianus arcticus* (Swains.) Cass.—*Bubo arcticus*, Swains. F. B. A. ii. 1831, 86, pl. 30. (Interior of fur countries.)

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- 405c. *Bubo virginianus satrapus*, Ridgw.—Orn. 40th Parallel, 1877, 572, foot-note.  
Northern coast N. Am. [= "var. *pacificus*" of Hist. N. Am. B. iii. 65.]
- 47a. *Syrnium tinnuncius* Linn. Ridgw.—Cf. RIDGW. Bull. Nutt. Orn. Club, iii. Jan. 1878, 2. St. Michael's, Alaska; L. M. Turner.)
- 47b. *Syrnium tinnuncius* FLORIDANA, Ridgw.—*S. cunicularia*, var. *floridana*, RIDGW. Ann. Sportsman, iv. No. 14, July 4, 1874, 216. (Sarasota Bay, Florida.)
48. *Geothlypis trichas* Daud. Sci. & Salv.—*G. ferrugineus* (Max.) COUES, Am. Mus. Nat. Hist., 1872, 170. Tucson, Arizona; C. Bendire.)
49. *Melospiza whitneyi* Cooper Coues.—*Athene whitneyi*, COOPER, Proc. Cal. Acad. Sci., 1882, 115. Ft. Mojave, S. E. California.)
50. *Falco sparverius* NEWTON, FORST. Ridgw.—*F. sacer*, FORSTER, Philos. Trans. lxii. 1797, 477. (Humboldt's Bay Terr.)
51. *Falco sparverius* Gmel. Ridgw.—*Falco obsoletus*, Gmel. S. N. i. 1788, 288. (Humboldt's Bay Terr.)
52. *Falco sparverius* PEALCI, Ridgw.—*F. communis*, var. *Pealci*, RIDGW. Bull. Nutt. Orn. Club, 1872, 391. (Northwest coast N. Am.)
53. *Falco sparverius* Phil. 31yth.—*Falco asalon* NEWTON, Man. Nat. Hist. Greenland, 1874, 41. At sea near Greenland, lat. 57° 41' N., long. 35° 23' W.)
54. *Falco columbarius* Suckley, Ridgw.—*Falco columbarius*, var. *Suckleyi*, RIDGW. Bull. Nutt. Orn. Club, v. Dec. 1873, 201. (Northwest coast N. Am.)
55. *Falco columbarius* RICHARDSONI, Ridgw.—*Falco (Hypotriorchis) richardsonii*, RIDGW. Proc. Acad. Nat. Hist., Dec. 1870, 145. (Interior of North America.)
56. *Falco sparverius* (Vig.) Gray. (Florida.)\*
57. *Falco sparverius* (Gmel.) Gray.—Cf. NEWTON, Man. Nat. Hist. Greenland, 1874, 41. Cape Farewell, Greenland.)
58. *Falco sparverius* RIDGW.—Bull. U. S. Geol. & Geog. Surv. Terr. No. 4, 1874, 459. (Guadalupe I., Lower California.)
59. *Falco columbarius* STRIATULUS, Ridgw.—*A. palumbarius*, var. *striatulus*, RIDGW. Hist. N. Am. B. iii. 1874, 240. (Western N. Am.)
60. *Falco sparverius* MAYNARD, Bull. Nutt. Orn. Club, i. No. 1, April, 1876, 1. (New York, Mich.)
61. *Bubo borealis* CRISP,—"B. borealis, variety *kridgerii*," Hoopes, Proc. Philad. Acad. Nat. Hist., 1876, 1. (= juv.; Winnebago Co., Iowa.)
62. *Bubo borealis* CASANUS, Ridgw.—*B. borealis*, var. *lucasanus*, Hist. N. Am. B. iii. 1874, 240. (Cape St. Lucas.)
63. *Bubo borealis* SOCORROENSIS.  
The Proceedings of the Boston Society of Natural History, 1871, p. 42, Mr. Lawrence describes *B. borealis* var. *montanus*, Nutt." as being very abundant on the island of Socorro, where it is the only species of hawk to be found, and where it is a "constant resident, feeding and subsisting entirely on land crabs", etc. In the same paper, p. 43, Mr. Lawrence applies the same name to a hawk occurring abundantly on the Tres Marias Islands, where it is subsisting entirely upon the Iguana lizard and rabbits." In "History of the Birds of the United States", vol. iii, p. 285 (1874), I referred the Tres Marias bird to *Buteo borealis*, and described our only specimen from that locality as the young of the adult, although I had not, from want of specimens, been able to compare it with the adult. I now have strong doubts as to its being the same as the Socorro Hawk, while as to the hawk found on Socorro I regard it quite certain that it is the same as the Socorro Hawk (*Polyborus luteus*), a species or race peculiar to the Socorro Islands, which are for the most part entirely local. I therefore propose to name the Socorro Hawk *B. borealis socorroensis*.
64. *Bubo borealis* CRISP, in Schomb. Guiana, iii. 1848, 739.—"*B. zonocercus*, ScL.", Bull. Nutt. Orn. Club, 1870, 479. (Coast of California, near San Diego.)

\*This species in my collection said to have been obtained in Florida. It was found among the birds, forming part of a dealer's stock, and was evidently the same "make" as the Socorro Hawk.

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441. *Buteo albicaudatus* (Vieill.).—*B. albicaudatus*, COUES, The Country, i. 184, July 13, 1878. (Lomita, Texas; G. B. Sennott). Cf. RIDGW. Proc. U. S. Nat., Mus. i. Oct. 2, 1878, 154 (synonymy and descriptions).
444. *Urubitinga anthracina* (Licht.) Nitzsch.—Cf. HENSHAW, Am. Sportsman. v. 328. Feb. 20, 1875; Orn. Wheeler's Exp. 1875, 420. (Arizona.)
446. *ONYCHOTES GRUBERI*, Ridgw.—Proc. Philad. Acad. Dec. 1870, 149. (California.)
450. *Thrasactes harygia*.
- According to Dr. Felix L. Oswald, in the *American Naturalist*, 1878, p. 151, a specimen of the Harpy Eagle was shot at the "delta of the Rio Grande", in Texas, by Professor S. B. Buckley, State geologist of Texas. A full account of the circumstance is given in Dr. Oswald's interesting article. I have seen somewhere a record of the occurrence of this species in Louisiana, but cannot now lay hand on the reference. According to my recollection, the record may be found in an old number of the "Proceedings" of the Philadelphia Academy of Sciences, or else of the Zoological Society of London.
461. *ZENAIIDURA GRAYSONI*, Baird.—Cf. LAWRENCE, Ann. Lyc. N. Y. x. 1871, 17; Proc. Boston Soc. xiv. 1871, 299. (Socorro I.)
463. *Engyptila albifrons* (Bp.) Coues.—*Aechmoptila albifrons*, Coues, Bull. U. S. Geol. & Geog. Surv. Terr. iv. No. 1. 1878, 48 (South Texas); Ridgw. Proc. U. S. Nat. Mus. i. Oct. 1878, 158 (synonymy).
- 471a. *CANACE OBSCURA FULIGINOSA*, Ridgw.—*C. obscura*, var. *fuliginosa*, Ridgw. Bull. Essex Inst. Dec. 1873, 199. (Northwest coast, Oregon to Sitka.)
- 471b. *Canace obscura richardsonii* (Dougl.) Ridgw.—*Tetrao richardsonii*, "SABINE, MSS.", DOUGL. Linn. Trans. xvi. 1829, 141.
- 477a. *CUPIDONIA CUPIDO PALLIDICINCTA*, Ridgw.—*C. cupido*, var. *pallidicincta*, Ridgw. Bull. Essex Inst. Dec. 1873, 199. (Southwestern prairies.)
- 478a. *Pediocetes phasianellus columbianus* (Ord) Ridgw.—*Phasianus columbianus*, Ord, Guthrie's Geog. 2d Am. ed. ii. 1815, 317.—*Pediocetes columbianus*, ELLIOT, Tr. Ac. Nat. Sci. Philad. 1862, 403.
- 480a. *ORTYX VIRGINIANA FLORIDANA*, Coues.—*O. virginianus*, var. *floridanus*, COUES, Key, 1872, 237. (Florida; J. A. Allen.)
- 481a. *Oreortyx picta plumifera* (Gould) Ridgw.—*Ortyx plumifera*, Gould, P. Z. S. 1837, 42.
488. *Ardea cinerea*, Linn.—Cf. REINH. Ibis, 1861, 9. (Greenland.)
499. *Mycteria americana*, Linn.—Cf. COUES, Check List, 1873, 135. (Austin, Texas.)
500. *Hæmatopus ostralegus*, Linn.—Cf. REINH. Ibis, 1861, 9. (Greenland.)
512. *Vanellus cristatus* (Linn.) Meyer.—Cf. REINH. Ibis, 1861, 9. (Greenland.)
514. *Charadrius pluvialis*, Linn.—Cf. NEWTON, Man. Nat. Hist. Greenl. 1875, 101. (Greenland.)
- 515a. *Charadrius dominicus fulvus* (Gmel.) Ridgw.—*C. fulvus*, COUES, Elliott's Prybilov Islands, 1875, 179; Birds N. W. 1874, 450, foot-note. (Prybilov Islands, Alaska.)
518. *Ægialites hiaticula* (Linn.) Boie.—Cf. NEWTON, Man. Nat. Hist. Greenl. 1875, 101. (Greenland.)
519. *Ægialites curonicus* (Gmel.) Gray.—Introduced as *Æ. microrhynchus*, Ridgw., n. s., Am. Nat. viii. Feb. 1874, 109. ("San Francisco, Cal.")
- 520a. *ÆGIALITES MELODUS CIRCUMCINCTUS*, Ridgw.—*Æ. melodus*, var. *circumcinctus*, Am. Nat. viii. Feb. 1874, 109. ("Plains between Missouri River and Rocky Mountains.")
524. *Scolopax rusticula*, Linn.—Cf. BAIRD, Am. Jour. Arts & Sciences, xli. May, 1866, 25. (Newfoundland.)
526. *Gallinago media*, Leach.—Cf. REINH. Ibis, 1861, 11. (Greenland.)
531. *ARQUATELLA COUESI*, Ridgw.—Bull. Nutt. Orn. Club, July, 1880, 160. (Aleutian islands and contiguous coast of Alaska.)
532. *ARQUATELLA PTILOCNEMIS* (Coues) Ridgw.—"*Tringa crassirostris*", DALL, Am. Nat. viii. 1873, 635 (St. Paul's I., Alaska).—*Tringa ptilonemis*, COUES, Elliott's Prybilov Islands, 1875, foot-note.

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533. *Actodromas acuminata* (Horsf.) Ridgw.—Obtained at St. Michael's, Alaska, by Mr. E. W. Nelson, U. S. Signal Service, and by Dr. T. H. Bean, of the National Museum, at Port Clarence, on the Arctic coast of Alaska.
- Numerous specimens of this Indian and Australian species, all in the autumnal plumage, have been obtained by Mr. Nelson. Dr. Bean's example was obtained September 2, 1881, at Port Clarence, on the Arctic coast. Mr. Nelson is entitled to the credit of being the first to discover this species in America, and the announcement should have been made in his name; but owing to the apparent miscarriage of a letter on the subject, I have been unable to get the data upon which to base such publication.
537. *ACTODROMAS BAIRDI*, Coues.—Proc. Philad. Acad. 1861, 194. (Arctic America.)
539. *Pelidna alpina* (Linn.) Boie.—*Tringa alpina*, NEWTON, Man. Nat. Hist. Greenl. 1875, 103. (Greenland.)
- 541a. *EREUNETES PUSILLUS OCCIDENTALIS* (LAWR.) Coues.—*E. occidentalis*, LAWR. Proc. Philad. Acad. 1864, 107. (Pacific coast U. S.)
544. *Limosa lapponica nova-zealandia*, Gray.—*L. uropygiales*, BAIRD, Trans. Chicago Acad. i. 1869, 320, pl. 32. (Alaska.)
546. *Limosa cgocephala* (Linn.) Leach.—Cf. REINH. Ibis, 1861, 11. (Greenland.)
551. *Rhyacophilus ochropus* (Linn.) Ridgw.—Cf. BREWER, Bull. Nutt. Orn. Club, II. Jan. 1878, 49. (Nova Scotia.)
561. *Numenius phaeopus* (Linn.) Lath.—Cf. REINH. Ibis, 1861, 10. (Greenland.)
562. *Numenius tahitiensis* (Gmel.) Cass.—“*Numenius femoralis*, PEALE”, RIDGW. Am. Nat. July, 1874, 435. (Kadiak, Alaska; F. Bischoff.)
568. *Parra gymnotoma*, Wagl.—Cf. MERRILL, Bull. Nutt. Orn. Club, i. Nov. 1876, 8 (Ft. Brown, Texas); RIDGW. Proc. U. S. Nat. Mus. i. 1878, 167, pl. iii (synonymy and descriptions).
570. *RALLUS OBSOLETUS*, Ridgw.—*R. elegans*, var. *obsoletus*, RIDGW. Am. Nat. viii. Feb. 1874, 111. (Coast California.)
- 571a. *RALLUS LONGIROSTRIS SATURATUS*, Hensh.—Cf. RIDGW. Bull. Nutt. Orn. Club, July, 1880, 140. (Louisiana.)
573. *Porzana maruetta* (Leach) Bp.—“*Ortygometra porzana* (Linn.)”, REINH. Ibis, 1861, 12. (Greenland.)
- 576a. *PORZANA JAMAICENSIS COTURNICULUS*, Baird.—*P. jamaicensis*, var. *coturniculus*, BAIRD, Am. Nat. viii. Feb. 1874, 111. (Farallone Islands, California.)
586. *Olor cygnus* (Linn.) Bp.—“*Cygnus ferus*, RAY”, REINH. Ibis, 1861, 13. (Greenland.)
587. *Olor minor* (Pall.) Bp.—“*Cygnus bewickii*”, Sw. & Rich. F. B. A. ii. 1831, 455. (“Igloodik [Arctic America], lat. 66°, June 19, 1823.” Said to breed “on the sea-coast within the Arctic circle.” The description, from specimens killed at locality quoted above, is of the true *O. minor*, or Bewick's Swan.)
592. CHEN ROSSI (Baird) Ridgw.—*Anser rossii*, “BAIRD, MSS.”, CASS. Proc. Philad. Acad. 1861, 73. (Arctic America.)
593. *Anser albifrons* (Gm.) Bechst.—Cf. REINH. Ibis, 1861, 12. (Greenland.)
603. *ANAS FULVIGULA*, Ridgw.—*A. obscura*, var. *fulvigula*, Am. Nat. viii. Feb. 1874, 111. (Florida.)
- 627a. *SOMATERIA MOLLISSIMA DRESSERI* (Sharpe) Coues.—*S. dresseri*, SHARPE, Ann. Mag. N. H. July, 1871, 51, figs. 1, 2.
- This bird has been called by all American writers *S. mollissima*. The true Eider, however, has only lately been detected in America, it being the form found by Mr. Kumlien breeding abundantly on the west side of Cumberland Gulf.
631. *Melanetta fusca* (Linn.)—Cf. REINHARDT, Vid. Medd. Nat. För. Kjobenhavn. 1879, 1. (South Greenland.)
- 640a. *Thalacrocorax violaceus resplendens* (Aud.) Ridgw.—*Graculus bairdi*, “GRUBER, MSS.”, COOPER, Proc. Philad. Acad. Jan. 1865, 5. (Farallone Islands.)

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647. *Phalacrocorax bicristatus*, Pallas.—“*Graculus bicristatus*, Pallas”, Baird, Trans. Chicago Acad. i. 1869, —, pl. 33. (St. George's I., Alaska; W. H. Dall.)
651. *Sula cyanops*, Sundev.—Cf. LAW. Proc. Boston Soc. xiv. 1871, 302. (Socorro I.)
653. *Sula piscator* (Linn.) Cass.—Cf. LAW. Proc. Boston Soc. xiv. 1872, 303. (Socorro I.)
655. *Phaethon atherus*, Linn.—Cf. FREKE, Sci. Proc. Roy. Dubl. Soc. 1879.\* (Banks of Newfoundland, August, 1876.)
665. *Larus affinis*, Reinh.—Vid. Medd. Nat. För. Kjobenhavn, 1853, 78. (Greenland.)
- 666a. *LARUS ARGENTATUS SMITHSONIANUS*, Coues.—*L. smithsonianus*, COUES, Proc. Philad. Acad. 1862, 296. (North America.)
667. *Larus californicus*, Pall.—“*Larus borealis*, Brandt”, BAIRD, Trans. Chicago Acad. i. 1869, 305. (St. Michael's, Alaska; Bischoff.)
671. *Larus canus*, Linn.—Cf. BREWER, Bull. Nutt. Orn. Club, iii. Jan. 1878, 50. (Labrador; Coues.)
689. *STERNA ALEUTICA*, Baird.—Trans. Chicago Acad. i. 1869, 321, pl. 31, fig. 1. (Kadiak, Alaska; Bischoff.)
692. *Sterna anastheta*, Scopoli.—*Sterna (Haliplana) anastheta*, COUES, Key, 1872, 322 (Florida.)
694. *Hydrochelidon leucoptera* (Melsn.) Boie.—Cf. BREWER, Am. Nat. March, 1874, 188. (Lake Koshkonong, Wisconsin; T. Kumlien.)
- 705b. *FULMARUS GLACIALIS RODGERSI* (Cass.) Coues.—*F. rodgersi*, Cass. Proc. Philad. Acad. 1862, 290 (North Pacific); BAIRD, Trans. Chicago Acad. i. 1869, 323, pl. 34, fig. 1 (St. Georges I., Alaska.)
710. *PUFFINUS CREATOPUS*, Cooper.—Cf. COUES, Proc. Philad. Acad. 1864, 131. (Coast California.)
713. *Puffinus gavia* (Forst.) Finsch.—*P. opisthomelas*, COUES, Proc. Philad. Acad. 1864, 139. (Coast California.)
715. *Puffinus griseus* (Gmel.) Finsch.—*Nectris amaurosoma*, COUES, Proc. Philad. Acad. 1864, 124.
716. *Puffinus tenuirostris*, Temm.—*Nectris tenuirostris*, DALL & BANNISTER, Trans. Chicago Acad. i. 1869, 303. (Kotzebue Sound.)
718. *Estrelata bulweri* (Jard.) Gigl. & Salvad.—*Thalassidroma bulweri*, NEWTON, Man. Nat. Hist. Greenl. 1875, 108.
720. *HALOCYTENA MICROSONA*, Coues.—Proc. Philad. Acad. 1864, 78. (Coast of California.)
725. *CYMOCHOREA HOMOCHROA*, Coues.—Proc. Philad. Acad. 1864, 77. (Coast of California.)
737. *Colymbus adamsi*, Gray.—Proc. Zool. Soc. Lond. 1859, 167. (Alaska.)
- 763a. *LOMIA TROILE CALIFORNICA* (Bryant) Coues.—*Catarractes californicus*, BRYANT, Proc. Boston Soc. N. H. (Farallone Islands.)
764. *Lomia arra*, Pall.—*Cephus arra*, Pall. Zoög. Rosso-As. ii. 1811, 347. (Alaska.)

c. List of North American genera which have been described or added to the fauna since 1859, together with those whose names or orthography have been changed since that date.

1. *HYLOCICHLA*, Baird, Review Am. B. i. June 2, 1864, 12 (type, *Turdus mustelinus*, Gmel.).

The *Turdus musicus* of Europe is a strict congener of *T. mustelinus*, and it is possible that some generic name may have been based upon it previous to the imposition of *Hylocichla*.

6. *Turdus*, Linnæus, S. N. ed. 10. i. 1758, 168 (type, *T. viscivorus*, Linn.).

The *T. iliacus*, although not agreeing strictly with *T. viscivorus* in details of external structure, is still hardly different enough to entitle it to separation. It is much more like true *Turdus* than either of the other American genera (*Hylocichla* and *Merula*).

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\* We cannot cite the page of the "Proceedings", but the record appears on p. 44 of separate pamphlet entitled "A Comparative List of Birds found in Europe and North America. By Percy Evans Freke."

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7. *Merula*, "Leach, 1816" (type, *Turdus merula*, Linn.).

The proper generic division of the typical thrushes is a matter of considerable difficulty. Of the North American generic groups, *Hylodichla* and *Hesperocichla* of Baird are sufficiently isolated, the latter being represented by a single species, the former by all the smaller spotted species, besides the Song Thrush (*Turdus musicus*, Linn.) of Europe. I find no American species agreeing at all closely with *Turdus viscivorus* (the type of *Turdus*) in form; and a generic division based wholly or chiefly on coloration being out of the question, I find no other alternative than to adopt for the Robin and other American thrushes usually referred to "*Planesticus*" of Bonaparte (1854) the name *Merula*, Leach (1816), there being no essential difference in form between the type of the latter, *Turdus merula*, Linn. (*Merula nigra*, Leach) and our Robin (*T. migratorius*, Linn.); while a number of the Neotropical species exhibit the same sexual difference in coloration as *T. merula*. I would also refer to *Merula* the following Old World forms: *Turdus pilaris*, Linn. (type of *Arceuthornis*, Kaup, 1829), *Turdus atrogularis*, Temm. (type of *Ochloides*, Kaup, 1829), *Turdus torquatus*, Linn. (type of *Thoracocicla*, Reichenow, 1850), with perhaps some others.

9. *HESPEROCICHLA*, Baird, Review Am. B. i. July, 1864, 32 (type, *Turdus naxius*, Gmel.).
12. *Galeoscoptes*, Cabanis, Mus. Hein. i. 1850, 82 (type, *Muscicapa carolinensis*, Linn.).
19. *Cinclus*, Bechstein, Gemein. Naturg. 1802 (type, *Sturnus cinclus*, Linn.). [Cf. BAIRD, Review Am. B. i. 1864, 59, foot-note.]
20. *Cyanocula*, Brehm, Vög. Deutschl. 1828 (type, *Motacilla suecica*, Linn.).
34. *Phylloscopus*, Boie, Isis, 1826, 792 (type ?)
50. *AURIPARUS*, Baird, Review Am. B. i. Aug. 1864, 85 (type, *Agelaius flaviceps*, Sundev.).
61. *THRYOMANES*, Solater, Cat. Am. B. 1861, 22 (type, *Troglodytes bewicki*, Aud.).
65. *Anorthura*, Rennie, Montagu's Orn. Dict. 2d ed. 1831, 570 (type, *A. communis*, Rennie = *Motacilla troglodytes*, Linn.).
67. *Telmatodytes*, Cabanis, Mus. Hein. i. 1850, 78 (type, *Certhia palustris*, Will.).
69. *Motacilla*, Linnæus, S. N. 1735 (type, *M. alba*, Linn.).
70. *Budytes*, Cuvier, Rêg. An. i. 1817, 371 (type, *Motacilla flava*, L.).
76. *Helonæa*.—*Helinaia*, Audubon, Synop. 1839, 66 (type, *Sylvia swainsoni*, Aud.).—[Orthography emended by AGASSIZ, Nomencl. 1847. Cf. NEWTON, P. Z. 8—1879, 552.]
90. *PERISSOGLOSSA*, Baird, Review Am. B. i. 1864, 180 (type, *Motacilla tigrina*, Gm.).
92. *PEUCEDRAMUS*, Coues, in Henshaw's Orn. Wheeler's Survey, 1875, 201 (type, *Sylvia olivacea*, Giraud).
115. *Siurus*.—Cf. COUES, Bull. Nutt. Orn. Club.
124. *Wilsonia*, Bonaparte, Comp. List. 1838, 23 (type, *Sylvia mitrata*, Aud.). [Cf. COUES, Bull. Nutt. Orn. Club, April, 1880, 95.\*]
131. *Cardellina*, "Dubus", Bonap. Conspectus i. 1850, 312 (type, *Cardellina amicta*, Dubus = *Muscicapa rubrifrons*, Giraud).
132. *ERGATICUS*, Baird, Review Am. B. i. May, 1865, 264 (type, *Setophaga rubra*, Swains.).
133. *Basileuterus*, Cabanis, in Schomb. Guiana, iii., 1848, 666 (type, *Sylvia vermicolor*, Vieill.).
135. *Fireosyltria*, Bonaparte, Comp. List. 1838, 26 (type, *Muscicapa olivacea*, Linn.).
140. *LANIVIREO*, Baird, Review Am. B. i. May 23, 1866, 345 (type, *Fireo flavifrons*, Vieill.?).

\* It is exceedingly doubtful whether *Wilsonia*, Bp., should displace *Myiodioides*, Aud. Bonaparte's name occurs first in a mere list, is used only as a heading for a subgeneric group, and is unaccompanied either by a diagnosis or an indication of type. Audubon, however, only a year later, in designating the same group of birds by the new generic term *Myiodioides*, gave an excellent diagnosis of the generic characters. It appears to us that the slight difference of date in favor of Bonaparte's name is greatly overbalanced by the pains which Audubon took to duly characterize his genus, thus conforming to the requirements of nomenclatural laws, which Bonaparte failed to do.

[Note.—Upon reconsideration of all the facts bearing on the case, I see no reason why *Myiodioides* should not be preferred, and accordingly restore it in this edition of the catalogue.]



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148. *Lanius*, Linnæus, S. N. ed. 10, 1758, 93 (type, *L. excubitor*, Linn.). [Cf. Coues, Birds Colorado Val. i. 1878, 539.]
153. *Petrochelidon*, Cabanis, Mus. Hein. i. 1850, 47 (type, *Hirundo melanogaster*, Sw. = *P. swainsoni*, Sc.).
155. *Tachycineta*, Cabanis, Mus. Hein. i. 1850, 48 (type, *Hirundo thalassina*, Sw.).
157. *Cotile*, Boie.—Cf. WHARTON, The Ibis, Oct. 1879; COUES, Bull. Nutt. Orn. Club, April, 1880, 98.
158. *Stelgidopteryx*, Baird, B. N. Am. 1858, 312, in text (type, *Hirundo serripennis*, Aud.).
167. *Pyrrhula*, Brisson, Orn. 1760 (type, *Loxia pyrrhula*, Linn. = *Emberiza coccinea*, Sandb.).
172. *Loxia*, Linnæus, S. N. ed. 10, i. 1758, 171 (type, *L. curvirostra*, Linn.).
181. *Astragalinus*, Cabanis, Mus. Hein. i. 1851, 159 (type, *Fringilla tristis*, Linn.).
187. *Centrophanes*, Kaup, Ent. Gesch. Eur. Thierw. 1829 (type, *Emberiza lapponica*, Linn.).
190. *Rhynchophanes*, Baird, B. N. Am. 1858, 432, in text (type, *Plectrophanes macconni*, Lawr.).
224. *Amphispiza*, Coues, Birds N. W. 1874, 234 (type, *Emberiza bilineata*, Cass.).
244. ZAMELODIA, Coues, Bull. Nutt. Orn. Club, v. April, 1880, 98 (type, *Loxia ludovicianae*, Linn.).
247. *Passerina*, Vieillot, Analyse, 1816, 30 (type, *Tanagra cyanea*, Linn.). [Cf. COUES, l. c. 96.]
253. *Phonipara*, Bonaparte, Conspectus. i. 1850, 494 (type, *Loxia canora*, Gmel.).
254. *Spiza*, Bonaparte, Obs. Wils. Orn. 1825 (part); Specc. Comp. 1827, 47 (type, *Emberiza americana*, Gmel.). [See anteâ, 3.]
279. *Sturnus*, Linnæus, S. N. ed. 10, i. 1758, 167 (type, *S. vulgaris*, Linn.).
286. *Gymnocitta*.—Cf. COUES, Bull. Nutt. Orn. Club, April, 1880, 98.
290. *Cyanocitta*, Strickland, Ann. Mag. N. H. xv. 1845, 260 (type, *Corvus cristatus*, Linn.). [Cf. COUES, Bull. Nutt. Orn. Club, April, 1880, 98.]
291. *Aphelocoma*, Cabanis, Mus. Hein. i. 1851, 221 (type, *Garrulus californicus*, Vig.).
299. *Alauda*, Linnæus, S. N. ed. 10, i. 1758, 165 (type, *A. arvensis*, Linn.).
308. *Pitangus*, Swainson, Zool. Jour. iii. 1827, 165 (type f.).
309. *Myiozetetes*, Scater, ex. Schiff.—*Myiozetetes*, "Schiff.", Bp. Compt. Rend. xxxviii. 1854, — (type f.).—*Myiozetetes*, Sc. P. Z. S. 1859, 46.
310. *Myiodynastes*, Bonaparte, Compt. Rend. xxxviii. 1854, 657 (type f.).
331. *Ornithion*, Hartlaub, Jour. für Orn. 1853, 35 (type, *O. inermis*, Hartl.).
332. *Pachyrhamphus*, "Gray, 1838" (type, *Pachyrhynchus curvieri*, Spix = *Tityra viridis*, Vieill.).
333. HADROSTOMUS, Cabanis, Mus. Hein. ii. Oct. 24, 1859, 84 (type, *Tityra atricapilla*, Vieill.).
334. *Eugenes*, Gould, Mon. Troch. pt. xii. 1856 (type, *Trochilus fulgens*, Swains.).
337. CALYPTE, Gould, Introd. Troch. oct. ed. 1861, 87 (type, *Orniemya costæ*, Bourc.).
342. *Atthis*, Reichenbach, Aufz. der Colib. 1853, 12 (type, *Orniemya heloisæ*, Less. & Delattr.).
343. *Stellula*, Gould, Introd. Troch. oct. ed. 1861, 90 (type, *Trochilus calliope*, Gould).
344. *Calothorax*, Gray, Gen. B. 1840, 13 (type, *Cyananthus lucifer*, Swains.).
345. *Amasilia*, Lesson.—*Amasilia*, Less. Ind. Gen. et Syn. du Gen. Troch. 1832, p. xxvii. (type, *Orthorhynchus amasili*, Less.).—*Amasilia*, Reich. Av. Syst. Nat. 1849, pl. 39.
347. *Basilinna*, Boie, Isis, 1831, 546 (type, *Trochilus leucotis*, Vieill.).
348. LACHE, Elliot, Synop. Troch. March, 1879, 234 (type, *Cyananthus latirostris*, Swains.).
349. *Cypselus*, Illiger, Prodr. 1811, 229 (type, *C. apus*, Linn.). [Cf. anteâ, 6.]
350. *Cypseloides*, Streubel, Isis, 1848, 366 (type, *Cypselus fumigatus*, Natt.). [Cf. Sclater, P. Z. S. 1865, 614.]
354. *Caprimulgus*, Linnæus, S. N. ed. 10, i. 1858, 193 (type, *C. europæus*, Linn.). [Cf. Proc. U. S. Nat. Mus. i. 1878, 143; ib. iii. 1880, 5.]

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355. PHALENOPTILUS, Ridgway, Proc. U. S. Nat. Mus. iii. March 27, 1880, 5 (type, *Caprimulgus nuttalli*, Aud.).
366. *Xenopicus*, Baird, B. N. Am. 1858, 83, in text (type, *Leuconerpes albolavatus*, Cam.).
394. *Aluco*, Fleming, Phil. Zool. ii. 1828, 236 (type, *Strix flammea*, Linn.). [Cf. NEWTON, Yarrell's Brit. B. ed. 4, i. 150; Ibis, v. 94-105.]
395. *Asio*, Brisson, Orn. i. 1766, 28 (type, *Strix otus*, Linn.).
397. *Strix*, Linnæus, S. N.ed. 10, i. 1758, 92 (type, *S. stridula*, Linn.). [Cf. NEWTON, Ibis, ser. iii. vi. 94-105.]
399. *Ululu*, Cuvier, Rêg. An. i. 1817, 329 (type, *Strix uralensis*, Pall.).
- In *History of North American Birds* (vol. iii, pp. 28-30) I adopted for the Great Gray Owl (*Strix cinerea*, Gmel.) the subgeneric name *Scotioptex*, Swains., based upon this species, and on p. 8 of these Proceedings raised the same name to generic rank. A subsequent examination of *Strix uralensis*, Pallas, however, reveals the fact that the latter is strictly congeneric with *S. cinerea* and *S. lapponica*, and having been made the type of a genus *Uula* by Cuvier, in 1817, the latter name must take precedence over *Scotioptex*, which was not founded until 1831.
408. *Speotyto*, Gloger, Handb. Naturg. 1842, 226 (type, *Strix cucularia*, Mol.).
411. MICRATHENE, Coues, Proc. Philad. Acad. 1866, 51 (type, *Athene whitneyi*, Cooper.).
412. *Hierofalco*, Cuvier, Rêg. An. i. 1817, 312 (type, *Falco candicans*, Gm.).
416. *Æsalon*, Kaup, Natürl. Syst. 1829, 40 (type, *Falco æsalon*, Gmel. = *F. regulus*, Pall.).
419. RHYNCHOFALCO, Ridgway, Proc. Boston Soc. 1873, 46 (type, *Falco femoralis*, Temm. = *F. fusco-caeruleus*, Vieill.).
426. *Elanoides*, Vieillot, Nouv. Dict. xxiv. 1818, 101 (type, *Falco furcatus*, Linn.).
434. ANTENOR, Ridgway, Proc. Boston Soc. Nat. Hist. May, 1873, 63 (type, *Falco uncinatus*, Temm.).
444. *Urubitinga*, Lesson, Rev. Zool. 1839, 132 (no type!); Lafr. in d'Orb. Dict. Hist. Nat. ii. 1842, 786 (type, *Falco urubitinga*, Gm. = *F. sonurus*, Shaw).
446. ONYCHOTES, Ridgway, Proc. Philad. Acad. Dec. 1870, 142 (type, *O. gruberi*, Ridgw.).
450. *Thrasætus*, Gray, Proc. Zool. Soc. Lond. 1837, 108 (type, *Falco hærpyia*, Linn.).
451. *Haliaeetus*, Savigny.—This is the original and correct orthography. [Cf. GRAY, Handb. i. 1869, 16; COUES, Bull. Nutt. Orn. Club, Apr. 1890, —.]
453. PSEUDOGRYPHUS, Ridgway, in B. B. & R. Hist. N. Am. B. iii. Jan. 1874, 337, 338 (type, *Fulur californianus*, Shaw).
455. *Catharista*, Vieillot, Analyse, 1816, 21 (type, *Vultur uruba*, Vieill. = *V. atrata*, Bartr. Cf. RIDGW. Bull. Nutt. Orn. Club, April, 1880, 80).
463. ENGYPYTLA, Sundevall, Met. Nat. Av. Disp. Tent. 1872, 156 (type, *Columba rufaxilla*, Rich. & Bern.).
467. GEOTRYGON, Gosse, Birds Jam. 1847, 316, foot-note (type, *G. sylvatica*, Gosse = *Columba cristata*, Temm.).
469. *Ortalis*.—Cf. WHARTON, The Ibis, Oct. 1879, 450. [= *Ortallia*, Merrom (false orthography).]
471. *Canacr*, Reichenbach, Av. Syst. Nat. 1851 (type, *Tetrao canadensis*, Linn.).
491. DICHROMANASSA, Ridgway, Bull. U. S. Geol. & Geog. Surv. Terr. iv. No. 1, Feb. 5, 1878, 246 (type, *Ardea rufa*, Bodd.).
492. HYDRANASSA, Baird, B. N. Am. 1858, 660, in text (type, *Ardea ludoviciana*, Gmel. = *A. tricolor*, Müll.).
499. *Mycteria*, Linnæus, S. N. i. 1758, 140 (type, *M. americana*, Linn.).
501. *Eudocimus*, Wagler, Isis, 1832, 1232 (type, *Scolopax rubra*, Linn.). [Cf. ELLIOT, Ibis, 1877, 492.]
503. *Plegadis*, Kaup, Skizz. Ent. Gesch. 1829, 82 (type, *Tantalus falcinellus*, Linn.). [Cf. SCLATER & SALVIN, Ibis, 1878, 112.]
505. *Ajaja*, Reichenbach, Handb. 1851, p. xvi. (type, *Platalea ajaja*, Linn. = *P. rostr.* Bris.). [Cf. RIDGWAY, Proc. U. S. Nat. Mus. iii. 1880, 10.]

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512. *Fanellus*, Meyer, Vög. Deutschl. i. 1810, 10 (ex. Linn. 1735; type, *Tringa vanellus* Linn.).
516. *Oxyechus*, Reichenbach, Av. Syst. 1853, Introd. p. xviii. (type, *Charadrius vociferus*, Linn.).
522. *Ochthodromus*, Reichenbach, l. c. (type, *Charadrius wilsonius*, Ord.).
523. *PODASOCTES*, Coues, Proc. Philad. Acad. 1866, 96 (type, *Charadrius montanus*, Towns.).
524. *Scolopax*, Linnæus, S. N. ed. 10, i. 1758, 145 (type, *S. rusticola*, Linn.).
530. *Arquatella*, Baird, B. N. Am. 1858, 717 (type, *Tringa maritima*, Brinn.).
533. *Actodromas*, Kaup, Sk. Ent. Eur. Thierw. 1829, 37 (type, *Tringa minuta*, Leisl.).
539. *Pelidna*, Cuvier, Rêg. An. 1817, 490 (type, *Tringa alpina*, Linn.).
547. *Totanus*, Bechstein, Nat. Deutschl. 1803 (type, *Scolopax calidris*, Linn.).
554. *Machetes*, Cuvier, Rêg. An. 1817 (type, *Tringa pugnax*, Linn.). [Cf. COUES, Bull. Nutt. Orn. Club, Apr. 1880, 100.]
555. *Bartramia*, Lesson, Traité Ois. 1831, 553 (type, *B. laticauda*, Less. = *Tringa longicauda*, Bechst.). [Cf. Coues, l. c.]
564. *Lobipes*, Cuvier, Rêg. An. 1817 (type, *Tringa hyperborea*, Linn.).
565. *Steganopus*, Vieillot, Enc. Méth. 1823 (type, *S. tricolor*, Vieill. = *Phalaropus wilsoni*, Sab.).
568. *Parra*, Linnæus, S. N. i. ed. 12, 1766, 259 (type, *P. jacana*, Linn.). [For generic characters and illustrations, see these Proceedings, vol. i. pp. 166, 167, pl. iii.]
578. *Iomornis*, Reichenbach, Av. Syst. 1853, 21 (type, *Fulica martinica*, Linn.).
586. *Olor*, Wagler, Isis, 1832, 1234 (type, *Cygnus musicus*, Bechst. = *Anas cygnus*, Linn.).
590. *Chon*, Boie, Isis, 1822 (type, *Anas hyperborea*, Pall.).
598. *PHILACTE*, Bannister, Proc. Philad. Acad. Nov. 1870, 131 (type, *Anas canagious*, Sewast.).
619. *Clangula*, Fleming, Philos. Jour. 1828 (type, *Anas clangula*, Linn.). [Cf. DRESSER, B. Eur. pt. xvi. Dec. 1875; COUES, Bull. Nutt. Orn. Club, April, 1880, 101.]
636. *NOMONYX*, Ridgway, Proc. U. S. Nat. Mus. iii. March 27, 1880, 15 (type, *Anas dominica*, Linn.).
642. *Phalacrocorax*, Brisson, Orn. 1760 (type, *Pelecanus carbo*, Linn.). [Cf. SHARPE, Cat. B. Brit. Mus. iii. 1877, 146, foot-note.]
696. *Megalestris*, Bonaparte, Consp. ii. 1856, 206 (type, *Larus catarractes*, Linn. = *Catharacta skua*, Brinn.). [Cf. COUES, B. N. W. 1874, 603, 604, where, however, *Buphagus*, Mœhring, is adopted; but Mœhring's names being inadmissible,\* *Megalestris*, Bp., "strictly its only synonym" seems the only one available.]
703. *Phœbetria*, Reichenbach, Av. Syst. Nat. 1853, pl. 26, fig. 348 (type, *Diomedea fuliginosa*, Gmel.).
704. *Ossi-fraga*, Hombron & Jacquinot, Compt. Rend. xviii. 1844, 356 (type, *Procellaria gigantea*, Gmel.).
706. *Priocella*, Hombron & Jacquinot, Compt. Rend. xviii. 1844, 357 (type, *Procellaria glacialoides*, Smith = *P. tenuirostris*, Aud.).
707. *Priofusus*, Hombron & Jacquinot, Compt. Rend. xviii. 1844, 355 (type, *Procellaria cinerea*, Gmel. (?) = *P. melanura*, Bonn.).
717. *Æstelata*, Bonaparte, Consp. ii. 1855, 188 (type, *Procellaria hœsitata*, Temm.).
720. *HALOCYPTENA*, Coues, Proc. Philad. Acad. 1834, 78 (type, *H. microsoma*, Coues).
721. *Procellaria*, Linnæus, S. N. ed. 12, i. 1766, 212 (type, *P. pelagica*, Linn.).
722. *Oceanites*, Keyserling & Blasius, Wirb. Eur. 1840, 238 (type, *Procellaria oceanica*, Kuhl.).

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\*Cf. COUES, Bull. Nutt. Orn. Club, April, 1880, p. 100, sp. 437, *Machetes pugnax*.

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723. *Cymochorea*, Coues, Proc. Philad. Acad. 1864, 75 (type, *Procellaria leucorrhoa*, Vieill.).
726. *Oceanodroma*, Reichenbach, Av. Syst. 1853, xviii. (type, *Procellaria furcata*, Gmel.).
730. *Echmophorus*, Coues, Proc. Philad. Acad. 1862, 229 (type, *Podiceps occidentalis*, Lawr.).
732. *Dytes*, Kaup, Syst. Ent. Eur. Thierw. 1829 (type, *Colymbus cornutus*, Gmel.).
734. *Tachybaptus*, Reichenbach, Syst. Nat. Av. 1853, pl. 2 (type, *Colymbus minor*, Gmel.).
742. *Utamania*, Leach, Syst. Cat. 1816 (type, *Alca torda*, Linn.). [Cf. COUES, Proc. Philad. Acad. 1868, 18, 19.]
743. *Fratercula*, Brisson, Orn. 1760 (type, *Alca arctica*, Linn.). [Cf. COUES, Proc. Philad. Acad. 1868, 21.]
745. *Lunda*, Pallas, Zogr. Rosso-As. 1811, 363 (type, *Alca cirrhata*, Pall.). [Cf. COUES, Proc. Philad. Acad. 1868, 26.]
746. *Ceratorhina*.—Cf. COUES, Key, 1872, 341. [= *Cerorhinca*, Bonap. Ann. Lyc. N. Y. ii. 1828, 428 (false orthography).]
748. *Simorhynchus*, "Merrem, —, 1819 (type, *Alca cristatella*, Pall. *Ado* G. R. Gray)". [Cf. COUES, Proc. Philad. Acad. 1868, 35.]
750. *Ciccoronia*, Reichenbach, Av. Syst. Nat. 1853, — (type, *Phalaris microceros*, Brandt = *Uria pusilla*, Pall.).
752. *Alle*, Link, Beschr. Natur.-Samml. Univ. Rostock, 1806, 17 (type, *A. nigricans*, Link = *Alca alle*, Linn.). [Cf. COUES, Bull. Nutt. Orn. Club, iv. Oct. 1879, 244.]
753. *Synthliborhamphus*, BRANDT, Bull. Acad. St. Petersb. ii. 1837 (type, *Alca antiqua*, Gmel.).
763. *Lomvia*, Brandt, Bull. Acad. St. Petersb. ii. 1837, 345 (type, *Colymbus treilla*, Linn.). [Cf. COUES, Proc. Philad. Acad. 1868, 75.]

d. *Species included in the catalogue which have not yet (according to the records) actually been taken within the prescribed limits.*

[The following species enumerated in the catalogue have not, to this date, been taken within the United States; but all are known to occur so near our southern border as to render it quite certain that their capture within our limits is but a question of time and investigation. There are also included in this category all the species which are peculiar to the islands of Socorro and Guadalupe and the peninsula of Lower California.]

8. *MERULA CONFINIS*. (Cape St. Lucas.)
14. *HARPORHYNCHUS CINEREUS*. (Cape St. Lucas.)
18. *HARPORHYNCHUS GRAYSONI*. (Socorro.)
31. *REGULUS OBSCURUS*. (Guadalupe.)
43. *PARUS MERIDIONALIS*. (Highlands of Mexico.)
49. *PSALTRIPARUS MELANOTIS*.\* (Highlands of Mexico.)
- 55a. *CERTHIA FAMILIARIS MEXICANA*. (Highlands of Mexico.)
57. *CAMPYLORHYNCHUS AFFINIS*. (Cape St. Lucas.)
- 58a. *SALPINCTES OBSOLETUS GUADALUPENSIS*. (Guadalupe.)
62. *THRYOMANES BREVICAUDA*. (Guadalupe.)
69. *PARULA PITIAYUMI INSULARIS*. (Socorro.)
171. *CARPODACUS AMPLUS*. (Guadalupe.)
195. *PASSERCULUS GUTTATUS*. (Cape St. Lucas.)
223. *JUNCO INSULARIS*. (Guadalupe.)
- 238c. *PIPILO MACULATUS CONSOBRINUS*. (Guadalupe.)
- 238d. *PIPILO MACULATUS CARMANI*. (Socorro.)
- 240a. *PIPILO FUSCUS ALBIGULA*. (Cape St. Lucas.)

\* Probably seen by me in August, 1868, in the East Humboldt Mts., Nevada. (Cf. Orn. 40th Parallel Exp. 1877, p. 415.)

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267. *ICTERUS WAGLERI*. (Mexico.)  
 268. *PSILORHINUS MORIO*. (E. Mexico.)  
 291. *APHELOCOMA ULTRAMARINA COUCHL*. (E. Mexico.)  
 347. *BASILINNA XANTUSL*. (Cape St. Lucas.)  
 363a. *PICUS SCALARIS LUCASANUS*. (Cape St. Lucas.)  
 377a. *MELANERPES FORMICIVORUS ANGUSTIFRONS*. (Cape St. Lucas.)  
 390. *COLAPTES RUFIFILEUS*. (Guadalupe.)  
 381. *MOMOTUS CÆRULEICEPS*. (E. Mexico.)  
 393. *CONURUS HOLOCHLORUS BREVIPES*. (Socorro.)  
 415. *FALCO ALBIGULARIS*. (Whole of tropical America.)  
 424. *POLYBORUS LUTOSUS*. (Guadalupe.)  
 653. *SULA PISCATOR*. (Socorro.)  
 655. *PHÆTHON ÆTHEREUS*. (Newfoundland banks; Socorro?)  
 460. *ZENAUDURA GRAYSONL*. (Socorro.)

Of the following species given in the catalogue no specimens are known to have been taken within the limits of the United States, with the exception of those described and figured in Giraud's "Sixteen Species of Texan Birds" (1841).\*

59. *CATHERPES MEXICANUS* (= *Certhia albifrons*, Giraud).  
 130. *SETOPHAGA MINIATA* (= *Muscicapa derhami*, Giraud).  
 132. *ERGATICUS RUBER* (= *Parus leucotis*, Giraud).  
 133. *BASILEUTERUS CULICIVORUS* (= *Muscicapa brasieri*, Giraud).  
 134. *BASILEUTERUS BELLI* (= *Muscicapa belli*, Giraud).  
 160. *EUPHONIA ELEGANTISSIMA* (= *Pipra galericulata*, Giraud).  
 122b. *ASTRAGALINUS PSALTRIA MEXICANUS* (= *Fringilla texensis*, Giraud).  
 309. *MYIOZETES TEXENSIS* (= *Muscicapa texensis*, Giraud).  
 314. *MYIARCHUS LAWRENCEI* (= *Tyrannula lawrencii*, Giraud).  
 329. *EMPIDONAX FULVIFRONS* (= *Muscicapa fulvifrons*, Giraud).

c. *Species (chiefly Palearctic) which occur only as stragglers or visitors in Eastern North America, or which occur regularly only in Greenland and adjacent portions of the continent.*†

- [6.] *TURDUS ILIACUS*. Accidental in Greenland.  
 [69.] *MOTACILLA ALBA*. Accidental in Greenland.  
 [172.] *ÆGIOTHUS CANESCENS*. Resident in Greenland.  
 [279.] *STURNUS VULGARIS*. Accidental in Greenland.  
 [412a.] *HIEROFALCO GYRFALCO ISLANDUS*. Resident in South Greenland.  
 [416.] *ÆSALON REGULUS*. Accidental in Greenland.  
 [422.] *TINNUNCULUS ALAUDARIUS*. Accidental in Greenland.  
 [435.] *BUTEO VULGARIS*. Accidental in Michigan? [Cf. MAYNARD, Bull. Nutt. Orn. Club, i. 18.]  
 452. *HALIÆTUS ALBICILLA*. Resident in Greenland.  
 [492.] *ARDEA CINEREA*. Accidental in Greenland.  
 [506.] *HÆMATOPUS OSTRALEGUS*. Accidental in Greenland.  
 [514.] *CHARADRIUS PLUVIALIS*. Accidental in Greenland.  
 518. *ÆGIALITES HIATICULA*. Breeding in Greenland and west of Cumberland Gulf.  
 [524.] *SCOLOPAX RUSTICULA*. Accidental in Newfoundland and Eastern United States.  
 [526.] *GALLINAGO MEDIA*. Casual in Greenland and Bermudas.

\* These specimens are now in the collection of the United States National Museum.

† Strictly pelagic birds, which are more or less numerous off the coast, are excluded from this and the following lists.

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- [539.] PELIDNA ALPINA. Breeds in Greenland and Hudson's Bay Territory.  
 [540.] PELIDNA SUBARQUATA. Casual in Eastern North America (several records).  
 [546.] LIMOSA ÆGOCEPHALA. Accidental in Greenland.  
 [547.] TOTANUS GLOTTIS. Accidental in Florida.  
 [551.] RHYACOPHILUS OCHROPUS. Accidental in Nova Scotia.  
 [554.] MACHETES PUGNAX. Casual in Eastern North America (several records).  
 [561.] NUMENIUS PHÆOPUS. Accidental in Greenland.  
 [573.] PORZANA MARUETTA. Accidental in Greenland.  
 [577.] CREX PRATENSIS. Casual in Eastern North America, including Greenland.  
 [586.] OLOR CYGNUS. Accidental in Greenland.  
 [587.] OLOR MINOR. Casual (?) in fur countries.  
 [593.] ANSER ALBIFRONS. Breeds in South Greenland.  
 [597.] BERNICLA LEUCOPSIS. Casual in Eastern North America.  
 [611.] NETTION CRECCA. Casual in Eastern North America.  
 627. SOMATERIA MOLLISSIMA. Resident in Greenland and west side of Cumberland Gulf.  
 [631.] MELANETTA FUSCA. Accidental in Greenland.  
 [665.] LARUS AFFINIS. Accidental in Greenland.  
 [694.] HYDROCHELIDON LEUCOPTERA. Accidental in Wisconsin.  
 [711.] PUFFINUS ANGLORUM. Casual (?) off Atlantic coast.  
 [717.] CESTRELATA HÆSITATA. Accidental off Atlantic coast of U. S.  
 [718.] CESTRELATA BULWERI. Accidental near Greenland.  
 728. FREGETTA GRALLARIA. Accidental off coast of Florida.  
 [733.] DYTES AURITUS. Breeds in South Greenland.  
 743a. FRATERCULA ARCTICA GLACIALIS. Resident in Greenland.

*f. Palearctic and oceanic species occurring only in Alaska and other parts of the Pacific coast.*

- [20.] CYANECULA SUECICA. St. Michael's, Alaska, June 5, 1850. (See p. 215.)  
 [34.] PHYLLOSCOPUS BOREALIS. Breeds in Alaska.  
 [44.] PARUS CINCTUS. Abundant resident in Alaska.  
 [70.] BUDYTES FLAVA. Breeds abundantly in Alaska.  
 [167.] PYRRHULA CASSINI. Resident (?) in Alaska.  
 [399a.] ULULA CINEREA LAPPONICA. Casual (?) in Alaska (St. Michael's).  
 [407a.] SURNIA FUNEREA ULULA. Casual (?) in Alaska (St. Michael's).  
 511. APHRIZA VIRGATA. Casual along entire Pacific coast of America.  
 [515a.] CHARADRIUS DOMINICUS FULVUS. Regular autumnal visitant to Alaska.  
 [519.] ÆGIALITES CURONICUS. Accidental in California (?).  
 [533.] ACTODROMAS ACUMINATA. Accidental on coast of Alaska.  
 544. LIMOSA LAPPONICA NOVÆ-ZEALANDIÆ. Abundant visitant to Alaska.  
 553. HETEROSCELUS INCANUS. Whole Pacific coast. (Breeds.)  
 [562.] NUMENIUS TAHITIENSIS. Accidental in Alaska (Kadiak).  
 [702.] DIOMEDEA CULMINATA. Accidental off mouth of Columbia River (Audubon).  
 [703.] PHECBETRIA FULIGINOSA. Casual off Pacific coast.  
 [704.] OSSIFRAGA GIGANTEA. Accidental off Pacific coast of U. S.  
 706. PRIOCCELLA TENUIROSTRIS. Casual (?) off Pacific coast.  
 707. PRIOFINUS MELANURUS. Accidental off coast of California.  
 710. PUFFINUS CREATOPUS. Accidental (?) off coast of California.  
 713. PUFFINUS GAVIA. Casual (?) off coast of Lower California.  
 715. PUFFINUS GRISEUS. Casual (?) off coast of Lower California.  
 716. PUFFINUS TENUIROSTRIS. North Pacific (casual?).  
 [719.] DAPTION CAPENSIS. Accidental off coast of California.

*g. Palearctic species occurring both in Greenland and Alaska, but not recorded from any intermediate point in North America.*

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- [21.] *SAXICOLA GENANTHE*. Breeds in Greenland and on west side of Cumberland Gulf.  
[72.] *ANTHUS PRATENSIS*. Accidental (?) in Greenland and Alaska.  
[512.] *VANELLUS CRISTATUS*. Accidental in Greenland (and Alaska?).  
[608.] *MARECA PENELOPE*. Occurs in various parts of North America, south to North Carolina, and San Francisco.

*A. Tropical American species occurring only in southern portions of United States.*

EASTERN PROVINCE, INCLUDING FLORIDA AND COAST OF TEXAS.\*

137. *VIREOSYLVA CALIDRIS BARBATULA*. (South Florida.) *Hab.* Cuba.  
159. *CERTHIOLA BAHAMENSIS*. (Indian Key.) *Hab.* Bahamas.  
184. *CHRYSOMITRIS NOTATA*. (Accidental in Kentucky, *Ad.* AUDUBON.) *Hab.* highlands of Mexico and Guatemala.  
253. *PHONIPARA ZENA*. (Key West.) *Hab.* West Indies in general.  
265. *ICTERUS VULGARIS*. (South Carolina, etc.) *Hab.* Jamaica and northern South America.  
302. *Milvulus tyrannus*. (Accidental in Mississippi, New Jersey, etc.) *Hab.* whole of tropical South America east of the Andes, Atlantic coast region of Central America (and Mexico?).  
303. *TYRANNUS DOMINICENSIS*. (Florida.) *Hab.* whole of West Indies.  
357b. *CHORDEILES POPETUE MINOR*. (Florida.) *Hab.* Cuba and Jamaica.  
386. *COCCYZUS SENICULUS*. (Florida, Louisiana?) *Hab.* West Indies and parts of northern South America.  
399. *CROTOPHAGA ANL*. (Tortugas; near Philadelphia!) *Hab.* West Indies and parts of northern South America.  
420a. *TINNUNCULUS SPARVERIUS ISABELLINUS*.  
421. *TINNUNCULUS SPARVERIOIDES*. (Florida.) *Hab.* Cuba.  
429. *ROSTRHAMUS SOCIABILIS PLUMBEUS*. (Florida.) *Hab.* Tropical America in general.  
458. *COLUMBA LEUCOCEPHALA*. (Florida Keys.) *Hab.* West Indies; Honduras.  
462. *ZENaida AMABILIS*. (Florida Keys.) *Hab.* Greater Antilles.  
467. *GEOTRYGON MARTINICA*. (Florida Keys.) *Hab.* West Indies.  
468. *STARNGENAS CYANOCEPHALA*. (Florida Keys.) *Hab.* Cuba.  
502. *EUDOCIMUS RUBER*. (Louisiana?) *Hab.* Northern South America; Jamaica.  
503. *PLEGADIS FALCINELLUS*. (Florida, straggling northward.) *Hab.* Eastern Hemisphere chiefly.  
578. *IONORNIS MARTINICA*. (Southern portions in general, straggling northward.) *Hab.* whole of tropical America.  
581. *ARAMUS PICTUS*. (Florida.) *Hab.* West Indies and Atlantic coast of Central America.  
585. *PHENICOPTERUS RUBER*. (Florida Keys.) *Hab.* West Indies and shores of Gulf of Mexico and Caribbean Sea; Galapagos.  
635. *NOMONYX DOMINICUS*. (Accidental on Lake Champlain and in Wisconsin.) *Hab.* whole of tropical America.  
692. *STERNA ANÆSTHETA*. (Florida.) *Hab.* tropics generally.  
734. *TACHYBAPTES DOMINICUS*. (Lower Rio Grande, in Texas.) *Hab.* Tropical America in general.

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\* Excluding species peculiar to Florida.

## SOUTHWESTERN BORDER—TEXAS TO CALIFORNIA.

[The species of this list which are *peculiar* to the more elevated portions of Mexico and Guatemala (including the contiguous southern border of the United States) are distinguished by an asterisk (\*) prefixed to the number. The avi-fauna of temperate Mexico is decidedly more nearly related to that of the Western Province of North America than to the tropical fauna of the Mexican *tierra caliente* or hot coast-region. The genera of Neotropical affinities are printed in italics.]

## Catalogue No.

- \* 13a. HARPORHYNCHUS RUFUS LONGIROSTRIS. (Lower Rio Grande.)
- \* 15. HARPORHYNCHUS CURVIOSTRIS. (Lower Rio Grande.)
- \* 26. PHAINOPEPLA NITENS. (Texas to California.)
- \* 37. LOPHOPHANES ATROCISTATUS. (Lower Rio Grande.)
- \* 39. LOPHOPHANES WOLLWEBERI. (New Mexico; Arizona.)
- \* 49. PSALTRIPARUS MELANOTIS. (Nevada?)
- \* 50. AURIPARUS FLAVICEPS. (Texas to Arizona.)
- \* 56. *Campylorhynchus brunneicapillus*. (Texas to California.)
- \* 59. CATHERPES MEXICANUS. (Lower Rio Grande?)
- \* 60a. THRYOTHORUS LUDOVICIANUS BERLANDIERI. (Lower Rio Grande.)
- \* 61b. THRYOMANES BEWICKI LEUCOGASTER. (Lower Rio Grande to Arizona.)
- \* 83. HELMINTHOPHAGA LUCIÆ. (Arizona.)
- \* 89a. PARULA INSULARIS NIGRILORA. (Lower Rio Grande.)
- \* 92. PEUCEDRAMUS OLIVACEUS. (Lower Rio Grande? Arizona.)
- \* 104. DENDRÆCA GRACILÆ. (Arizona.)
- \* 106. DENDRÆCA CHRYSOPARIA. (Texas.)
- \* 129. SETOPHAGA PICTA. (Lower Rio Grande? Arizona.)
- \* 130. SETOPHAGA MINIATA. (Lower Rio Grande?)
- \* 131. CARDELLINA RUBRIFRONS. (Lower Rio Grande? Arizona.)
- \* 132. ERGATICUS RUBER. (Lower Rio Grande?)
- 133. *Basileuterus culicivorus*. (Lower Rio Grande?)
- \* 134. *Basileuterus belli*. (Lower Rio Grande?)
- \* 136. VIREOSYLVA AGILIS FLAVO-VIRIDIS. (Lower Rio Grande?)
- \* 142. VIREO ATRICAPILLUS. (Texas.)
- \* 147. VIREO VICINIOR. (Arizona; Southern California.)
- 160. *Euphonia elegantissima*. (Lower Rio Grande?)
- \* 163. PYRANGA HEPATICA. (New Mexico; Arizona.)
- \* 164a. PYRANGA ÆSIVA COOPERI. (New Mexico; Arizona.)
- \* 182a. ASTRAGALINUS PSALTRIA ARIZONÆ. (Upper Rio Grande to Arizona.)
- 182b. ASTRAGALINUS PSALTRIA MEXICANUS. (Lower Rio Grande?)
- \* 215. SPIZELLA ATRIGULARIS. (Lower Rio Grande to Lower California.)
- \* 222. JUNCO CINEREUS. (Arizona.)
- \* 227. PEUCEA ARIZONÆ. (Lower Rio Grande to Arizona.)
- \* 230a. PEUCEA RUFICEPS BOUGARDI. (Arizona.)
- \* 236. *Embernagra rufivirgata*. (Lower Rio Grande.)
- \* 241. PIPILO ABERTI. (Arizona.)
- \* 242a. CARDINALIS VIRGINIANUS IGNEUS. (Arizona; Lower California.)
- \* 243. PYRRHULOXIA SINUATA. (Lower Rio Grande to Lower California.)
- \* 250. PASSERINA VERSICOLOR. (Lower Rio Grande.)\*
- 252. *Spermophila moreletii*. (Lower Rio Grande.)
- \* 258a. MOLOTHRUS ATER OBSCURUS. (Texas to Lower California.)
- 259. MOLOTHRUS ÆNEUS. (Lower Rio Grande.)
- 263a. STURNELLA MAGNA MEXICANA. (Lower Rio Grande.)

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\* Accidental in Michigan!



## Catalogue No.

- \*266. *ICTERUS AUDUBONI*. (Lower Rio Grande.)
- \*268. *ICTERUS PARISORUM*. (Texas to Lower California.)
- \*269. *ICTERUS CUCULLATUS*. (Texas to Lower California.)
- \*275. *QUISCALUS MACRURUS*. (Lower Rio Grande.)
- \*276. *QUISCALUS PALUSTRIS*. (Head of Gulf of California? coast of Louisiana.)
- \*295. *APHELOCOMA SORDIDA ARIZONÆ*. (Arizona.)
- \*296. *Xanthura luzuosa*. (Lower Rio Grande.)
- \*334. *EUGENES FULGENS*. (Arizona.)
- \*342. *ATTHIS HELOISÆ*. (Texas.)
- \*344. *CALOTHORAX LUCIFER*. (Arizona.)
- 345. *Amasilia fuscoaudata*. (Lower Rio Grande.)
- \*346. *Amasilia yucatanensis*. (Lower Rio Grande.)
- \*348. *IACHE LATIROSTRIS*. (Arizona.)
- 356. *NYCTIDROMUS ALBICOLLIS*. (Lower Rio Grande.)
- \*358. *CHORDEILES ACUTIPENNIS TEXENSIS*. (Texas to Lower California.)
- \*363. *PICUS SCALARIS*. (Texas to Arizona.)
- \*365. *PICUS STRICKLANDI*. (Arizona.)
- \*373. *CENTURUS AURIFRONS*. (Lower Rio Grande.)
- \*374. *CENTURUS UROPYGIALIS*. (Arizona.)
- 373. *CERYLE AMERICANA CABANISI*. (Texas to Arizona.)
- 384. *TROGON AMBIGUUS* Gould. (Lower Rio Grande.)
- 390. *CROTOPHAGA SULCIROSTRIS*. (Lower Rio Grande.)
- \*391. *RHYNCHOPSITTA PACHYRHYNCHA*. (Rio Grande Valley ?)
- \*402b. *SCOPS ASIO MACCALLI*. (Texas.)
- \*403. *SCOPS TRICHOPSIS*. (New Mexico; Stockton, Cal. ?)
- \*404. *SCOPS FLAMMEOLUS*. (North to about 40° in higher western mountains.)
- 410. *GLAUCIDIUM PHALÆNOIDES*. (Texas and Arizona.)
- \*411. *MICRATHENE WHITNEYI*. (Arizona; S. E. California.)
- 419. *RHYNCHOPALCO FUSCO-CÆRULESCENS*. (Texas; New Mexico.)
- 434. *ANTENOR UNICINCTUS HARRISI*. (Louisiana to Lower California.)
- 440. *BUTEO ABBREVIATUS*. (Arizona; Southern California.)
- 441. *BUTEO ALBICAUDATUS*. (S. Texas.)
- 444. *Urbitinga anthracina*. (Arizona.)
- 445. *ASTURINA NITIDA PLAGIATA*. (Arizona. \*)
- 450. *THRASAETUS HARPYIA*. (Lower Rio Grande; Louisiana?)
- 457. *COLUMBA ERYTHRINA*. (S. Texas.)
- \*463. *Egyptila albifrons*. (S. Texas.)
- 464. *MELOPELIA LEUCOPTERA*. (Texas to Lower California.)
- \*466. *SCARDAPELLA INCA*. (Southern Texas.)
- \*469. *Ortalis vetula maccalli*. (S. Texas.)
- \*470. *MELEAGRIS GALLOPAVO*. (New Mexico; Upper Rio Grande in Texas.)
- 483. *LOPHORTYX GAMBELI*. (W. Texas to Arizona.)
- 484. *CALLIPEPLA SQUAMATA*. (W. Texas to Arizona.)
- 485. *CYRTONYX MASSENA*. (W. Texas to Arizona.)
- 499. *Mycteria americana*. (Southern Texas.)

## ENTIRE SOUTHERN BORDER.

- 423. *POLYBORUS CHERIWAY*.
- 427. *ELANUS GLAUCUS*.
- 455. *CATHARISTA ATRATA*.
- 465. *CHAMÆPELIA PASSERINA*.

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\* Accidental in Southern Illinois (only once observed).

i. *Supposed valid species described by Audubon and Wilson, which have not since been met with, and of which no specimens are known to exist in collections.*

Catalogue No.

32. *REGULUS CUVIERI*, AUD. Orn. Biog. i. 1832, 288, pl. 55 ("Banks of Schuylkill River, Pa., June, 1812").—BAIRD, B. N. Am. 1858, 228; Review, i. 1864, 66.—B. B. & R. Hist. N. Am. B. i. 1874, 75, pl. 5, fig. 7.
91. *PERISSOGLOSSA CARBONATA* (Aud.) Ridgw.—*Sylvia carbonata*, AUD. Orn. Biog. i. 1831, 308, pl. 60 (Kentucky).—*Dendroica carbonata*, BAIRD, B. N. Am. 1858, 287; Review, i. 1865, 207.—*Perissoglossa carbonata*, B. B. & R. Hist. N. Am. B. i. 1874, 214, pl. 12, fig. 3.
112. *DENDROICA MONTANA* (Wils.) Baird.—*Sylvia montana*, WILS. Am. Orn. v. 1812, 113, pl. xlv. fig. 2 ("Blue Mts. of Pennsylvania").—AUD. Orn. Biog. v. 294 ("California").—*Dendroica montana*, Baird, B. N. Am. 1858, 279; Review, i. 1865, 190.—*Dendroica montana*, B. B. & R. Hist. N. Am. B. i. 1874, 271.
126. *MYIODICTES MINUTUS* (Wils.) Bp.—*Muscicapa minuta*, WILS. Am. Orn. vi. 1812, 62, pl. 1. fig. 5.—AUD. Orn. Biog. v. pl. 434, fig. 3; B. Am. i. pl. 67.—*Myiodictes minutus*, Baird, B. N. Am. 1858, 293; Review, 1865, 241.—B. B. & R. Hist. N. Am. B. i. 1874, 316, pl. 16, fig. 2.

j. *List of untenable species and races of North American birds described since 1858.*

1. *Helminthophaga ruficapilla* var. *ocularis*, B. B. & R. Hist. N. Am. B. i. 1874, 191. (Chicago, Ill.) = No. 85.
- (†) 2. *Helminthophaga ruficapilla* var. *gutturalis*, B. B. & R. Hist. N. Am. B. i. 1874, 191. (East Humboldt Mts., Nevada; Ft. Tejon, Cal.) = No. 85 †
3. *Helminthophaga celata* var. *obscura*, B. B. & R. Hist. N. Am. B. i. 1874, 192. (Georgia and Florida.) = No. 86.
4. *Hirundo bicolor* var. *vespertina*, COOPER, Am. Nat. x. Feb. 1876, 91. (California.) = No. 155.
5. *Collyrio chemungensis*, GREGG, Proc. Elmira Acad. i. 1870, 9. (New York.) = No. 148, juv.
6. *Hesperiphona vespertina* var. *montana*, RIDGW. in B. B. & R. Hist. N. Am. B. i. 1874, 449, pl. 22, fig. 4. (Southern Rocky Mts. and mountain regions of Mexico.) = No. 165.
- (†) 7. *Loxia atrata*, von HOMEYER, Jour. für Orn. 1879, 179. (North America.) = No. 173 †\*
8. *Leucosticte campestris*, BAIRD, Orn. Cal. i. 1870, 163. (Colorado.) = No. 175a (individual variation).
- (†) 9. *Linaria brunneascens*, von HOMEYER, Jour. für Orn. 1879, 184. ("Lapland, Grönland, Schweden.")† = No. 179a †

\* "Somewhat smaller than *L. leucoptera*, but with about the same length of wing, the tail at least 10—shorter. Distinguished by its coloration. The red in ground tone is nearest that of the "Hakengimpel" [*Pinicola enucleator*] but everywhere darker, and saturated, as it were, with black, this color extending indefinitely both on the back as well as on the middle of the belly to the breast, as also on the lower tail-coverts. The feet are even darker colored than in *leucoptera*. The wing-bands are unaffected for the most part, although not quite so broad. This is especially seen in the first or terminal band, which begins, scarcely visible, at the edge of the wing, and remains very inconsiderable to the middle, then quickly expands to a great rounded spot. The extent of the second band is everywhere much more limited than in *leucoptera*."

"This is decidedly not a melanism, as is shown, not alone by the character of the coloration, but by the occurrence of two old males exactly alike."

"My two birds came from North America."—[Translation.]

† "The dark Linnet is nearest to this species in size, but it is easily distinguished by many features. The whole upper parts are blackish brown, with very narrow margins to the feathers of whitish and rusty yellow, which, on the rump, return to the ground color; on the sides of the head the feathers also have very fine, rusty white margins: the throat-spot is very large; the entire under parts to the middle of the belly are densely covered with many large, dark brown longitudinal streaks. Two birds killed in Lapland, June-July (sexes not determined), show a tender red on the side of the head. The

10. *Ægiothus fuscocens*, COUES, Proc. Philad. Acad. 1861, 222. (Labrador.) =No. 179 (midsummer plumage).
11. *Ægiothus rostratus*, COUES, l. c. (Greenland.) =No. 179a (midsummer plumage).
12. *Centronyx ochrocephalus*, AIKEN, Am. Nat. vii. 1873, 237. (El Paso Co., Colorado.) =No. 191 (autumnal plumage).
13. *Passerculus caboti*, B. B. & R. Hist. N. Am. B. iii. 1874, pl. xlv. fig. 9. (Nahant, Massachusetts.) =No. 233. [*Not described!*]
14. *Spizella caura*, COUES, The Ibis, 1865, 118, 164. (Ft. Whipple, Ariz.) =No. 215, young.
15. *Passerella obscura*, VERRILL, Proc. Boston Soc. ix. 1862, 153. (Anticosti I.) =No. 235, young.
16. *Hedymeles melanocephalus* var. *capitalis*, B. B. & R. Hist. N. Am. B. ii. 1874, 74. (Pacific coast of Mexico and United States.) =No. 245.
17. *Goniaptes carulus* var. *curhyncha*, COUES, Am. Nat. viii. 1874, 563. (Mexico.) =No. 246.
18. *Dolichonyx oryzivorus* var. *albinaucha*, RIDGW. Bull. Essex Inst. v. Nov. 1873, 192. (Missouri plains to Salt Lake Valley.) =No. 257.
19. *Empidonax pygmaeus*, MINOT, Land and Game Birds New England, 1877, —. (Near Boston, Mass.) [*Avis fletita!*]
20. *Dryobates hyloscopus*, CAB. & HEINE, Mus. Hein. iv. June 25, 1863, 69. (San José, Cal.) =No. 360b.
21. *Dryobates homorus*, CAB. & HEIN. Mus. Hein. iv. June 25, 1863, 65. (California.) =No. 361a.
22. *Picus cuvieri*, MALH. Mon. Pic. i. 1861, 85, pl. 22, fig. 3. (North America.) =No. 360, ♀ ad.
23. *Picus turati*, MALH. Mon. Pic. i. 1861, 125, pl. 29, figs. 5, 6, 7. (California and Rocky Mountains.) =No. 361, ♀ ad.
24. *Chamaepelia passerina* var. *pallascens*, BAIRD, Proc. Philad. Acad. 1859, 305. (Cape St. Lucas.) =No. 465.
25. *Pedioectes kennicottii*, SUCKL. Proc. Philad. Acad. 1861, 361. =No. 478.
26. *Bonasa jobetti*, JAYCOX, Am. Nat.
27. *Ibis thalassinus*, RIDGW. Am. Nat. viii. Feb. 1874, 110. (Pacific coast of America, from California to Chili.) =No. 504, juv.
28. *Ardea cyanirostris*, CORY, Birds of the Bahama Islands, 1880, —. (Bahamas.) =No. 492, breeding plumage.
29. *Cygnus pasmorei*, HINCKS, Pr. Linn. viii. 1864, 1. (Toronto, Canada.) =No. 589, juv.
30. *Bernicla barnstoni*, ROSS, Canad. Nat. vii. April, 1862, —. =594, var. ?
31. *Bernicla leucolama*, MURRY, Edinb. Phil. Jour. April, 1859, 226, pl. 4, fig. 1. =594, var.
32. *Pelecanus occipitalis*, RIDGW. Am. Sportsman, iv. 1874, 297. (Nevada.) =No. 640, adult, breeding plumage, after loss of occipital crest, the latter replaced by dusky-grayish patch.
33. *Thalasseus caspius* var. *imperator*, COUES, Proc. Philad. Acad. 1862, 538, in text. (North America.) =No. 680.
34. *Sterna portlandica*, RIDGW. Am. Nat. viii. 1874, 433. (Portland, Maine.) =No. 687, juv., second year
35. *Sterna fuliginosa* var. *crissalis*, BAIRD, Pr. Boston Soc. xiv. 1872, 265. (Socorro L., N. W. Mexico.) =No. 681.

wing-bands are merely indicated. The bill is very characteristic. It is somewhat weaker at the base than in *L. hornemannii*, but longer and remarkably darker in all seven specimens.

"The bird figured by Dresser on the second plate (lower figure) belongs here, and is by no means the young of *L. hornemannii*, as supposed by Dresser."

[This description accords well in every particular with the dark summer stage of *Ægiothus linaria* ~~hutchinsonii~~, described in 1861 by Dr. Coues as *Æ. rostratus*, the type of which came from Greenland.—R. B.]

k. List of exotic species which have been attributed to North America by various authors, but apparently without sufficient evidence of their occurrence.\*

1. *ANTHUS CERVINUS*, Pall.—ZANDER, Jour. für Orn. Extraheft i. 1853, 64. (Aleutian Islands.)
2. *Geothlypis æquinoctialis* (Gmel.) Caban.—*Sylvia delafeldii*, AUD. Orn. Biog. v. 1839, 307 ("Oregon").—*Trichas delafeldii*, AUD. B. A. Am. ii. 1841, 81, pl. 103.—*Geothlypis velatus*, BAIRD, B. N. Am. 1859, 243; Cat. 1859, No. 171.
3. *LANIUS LAHTORA*, Sýkes.—*Lanius elegans*, SWAINS. Faun. Bor. Am. ii. 1831, 122 (fur countries).—NUTT. Man. ii. 1832, 566. [Not *Collurio elegans*, Baird.]
4. *Progne leucogastra*, Baird.—*P. chalybea*, CASS. Illustr. 1856, 246 (California, *Adæ J. G. Bell*).
5. *Astragalinus yarrelli* (Aud.) Caban.—*Carduelis yarrelli*, AUD. Synop. 1839, 117 ("California"); B. Am. iii. 1841, 136, pl. 184.—*Chrysomitris yarrelli*, BAIRD, B. Am. 1858, 421; Cat. 1859, No. 312.
6. *Astragalinus barbatus* (Mol.) —.—*Carduelis stanleyi*, AUD. Synop. 1839, 118 ("California"); B. Am. iii. 1841, 137, pl. 185.—*Chrysomitris stanleyi*, BAIRD, B. N. Am. 1858, 420; Cat. 1859, No. 311.
7. *HYPOLIA ARCTOA* (Pall.) Ridgw.—*Leucosticte arctoa*, CABAN. Mus. Hein. i. 1851, 154 ("Russich-America").—*Leucosticte arctons*, BAIRD, B. N. Am. 1858, 430; Cat. 1859, No. 324.
8. *CARPODACUS HÆMORRHOUS* (Licht.) Sol.—BAIRD, B. N. Am. 1858, 417, foot-note (North America?); Cat. 1859, No. 309.
9. *LOXIA PITYOPSITTACUS*, Bechst.—Cf. NUTTALL, Man. Orn. Land Birds, ed. 1832, 537 ("high northern regions of America", *Adæ TEMMINCK*).
10. "*Zonotrichia*" *pileata* (Bodd.) —.—*Fringilla mertonii*, AUD. Orn. Biog. v. 312; B. Am. iii. 1841, 152, pl. 190 ("North California").
11. *Cynchramus schaniolus* (Linn.) Boie.—*Emberiza schaniolus*, NUTT. Man. Orn. Land Birds, ed. 1832, ii. 586 ("vicinity of Harrisburg in Pennsylvania", *Adæ Audubon*).
12. *Melanocorypha calandra* (Linn.) Boie.—*Alda calandra*, LINN., Sw. & RICH. F. B. A. ii. 1831, 244 ("fur countries"; spec. presented by the Hudson's Bay Co. said to be in the British Museum).—NUTT. Man. ii. 1832, 580.
13. *Trupialis militaris* (Linn.) Bp.—BAIRD, B. N. Am. 1858, 533 ("California"); Cat. 1859, No. 405.
14. *ICTERUS MELANOCEPHALUS* (Wagl.) Gray.—CASS. Illustr. 1856, 137, pl. 21 (Texas and New Mexico).—BAIRD, B. N. Am. 1858, 543 (not given as North American!); Cat. 1859, No. 410.
15. *CALOCITTA COLLIEI* (Vig.) Finsch.—"*Pica bullockii*, Wagl.", AUD. B. Am. iv. 1842, 105, pl. 229 ("woody portions of North California").—*Garrulus bullockii*, NUTT. Man. i. 1832, 230 ("Columbia R.").
16. *Tyrannus melancholicus*, Vieill.—BAIRD, B. N. Am. 1858, 176 (not given as North American); Cat. 1859, No. 129.
17. *Lampornis violicauda* (Bodd.) Elliot.—"*Trochilus mango*, Linn.", AUD. Orn. Biog. ii. 480; B. Am. iv. 1842, 186, pl. 251 ("Florida Keys").—*Lampornis mango*, BAIRD, B. N. Am. 1858, 130; Cat. 1859, No. 100.
18. *CAMPEPHILUS IMPERIALIS* (Gould) Gray.—*Picus imperialis*, AUD. Orn. Biog. v. 313; B. Am. iv. 1842, 212 ("Rocky Mountains and North California").—CASS. Illustr. 1856, 225, pl. 49.—BAIRD, B. N. Am. 1858, 89; Cat. 1859, No. 73.

\* This list does not include American species wrongly supposed by authors to be the same as European species, and so named, e. g. *Circus "cyanus"* for *C. auduboni*, *Regulus "aristatus"* for *R. satrapa*, *Troglodytes "parrulus"* or *T. "europæus"* for *T. ayresii* etc., etc., but only those which were through actual error (as it appears) wrongly attributed to North America. Species which are most likely to have occurred in North America are printed in small capitals; those whose occurrence would in any case be purely accidental are printed in italics.

19. *HYLOTOMUS SCAPULARIS* (Vig.) Ridgw.—“*Picus lineatus*, LINN.”, AUD. Orn. Biog. v. 315; B. Am. iv. 1842, 233 (“Columbia River”).
20. *STRIX STRIDULA*, Linn.—*S. aluco*, NUTT. Man. i. 1832, 135 (Newfoundland and Hudson’s Bay).
21. *CARINE NOCTUA* (Scop.) Kaup.—“*Strix passerina*, LINN.”, AUD. Orn. Biog. v. 269.—“*Surnia passerina*, Linn.”, AUD. B. Am. i. 1840, 116 (“Pictou, Nova Scotia”).
22. *Speotyto cunicularia* (Mol.) —.—*Athene cunicularia*, CASS. in Baird’s B. N. Am. 1858, 60 (“North America, west of Rocky Mountains”).
23. *THALASSOAEETUS PELAGICUS* (Pall.) Kaup.—*Aquila pelagica*, PALL. Zoögr Rosso-A. i. 1811, 343 (Russian America, *fd*e Steller).—*Haliaeetus pelagicus*, CASS. Illustr. 1856, 31, pl. 8; in Baird’s B. N. Am. 1858; BAIRD, Cat. 1859, No. 40.
24. *Sarcorhamphus gryphus* (Linn.) Dum.—*Cathartes gryphus*, BONAP. Am. Orn. iv. 1833, 318, pl. 22.—NUTT. Man. i. 1832, 35.
25. *GYPARCHUS PAPA* (Linn.) Glog.—*Cathartes papa*, NUTT. Man. i. 1832, 40 (“from the 30th degree of north latitude to the 32d in the southern hemisphere”).
26. *CATHARTES BURROVIANUS*, CASS. in Baird’s B. N. Am. 1858, 6 (“Lower California”); BAIRD, Cat. 1859, No. 4. [*Cf.* RIDGWAY, Bull. Nutt. Orn. Club, v. April, 1880, 83.]
27. *LOPHORTYX ELEGANS* (Less.) Nutt.—*Ortyx elegans*, NUTT. Man. ed. 1840, i. 792 (“Upper California”, *fd*e Lesson).
28. *BUTORIDES BRUNNESCENS* (Gundl.) Baird.—BAIRD, B. N. Am. 1858, 677 (in text); Cat. N. Am. B. 1859, No. 494.
29. *Hamatopus ater*, Vieill.—*Hamatopus townsendii*, AUD. Orn. Biog. v. 1839, 247, pl. 427; B. Am. v. 1842, 245, pl. 326.—*Hamatopus ater*, BAIRD, B. N. Am. 1858, 700; Cat. 1859, No. 514.
30. “TRINGA” *PLATYRHYNCHA*, Temm.—NUTT. Man. ii. 1832, 114 (Arctic America, *fd*e Temminck and Bonaparte).
31. *ACTODROMAS MINUTA* (Linn.) Kaup.—*Tringa minuta*, SW. & RICH. F. B. A. ii. 1831, 385 (Nelson and Hayes Rivers; “seen abundantly in the autumn”).—NUTT. Man. ii. 1834, 119.
32. *ACTODROMAS TEMMINCKI* (Leisl.) Ridgw.—*Tringa temmincki*, NUTT. Man. ii. 1832, 119 (Arctic America).
33. *TOTANUS CALIDRIS* (Linn.) Bechst.—SW. & RICH. F. B. A. ii. 1831, 391 (“Hudson’s Bay”; spec. in British Museum).—NUTT. Man. ii. 1834, 155.
34. *Helionis fulica* (Bodd.) —.—*H. surinamensis*, NUTT. Man. ii. 1832, 510 (“accidental visitor in the Middle States of the Union”).
35. *ANSER SEGETUM* (Gmel.) Bonap.—NUTT. Man. ii. 1832, 348 (Canada and Hudson’s Bay).
36. *CAIRINA MOSCHATA* (Linn.) Caban.—*Anas moschata*, NUTT. Man. ii. 1832, 403 (Lower Mississippi and Gulf coast of U. S.).
37. *CEDEMIA NIGRA* (Linn.) Hen.—*Fuligula nigra*, NUTT. Man. ii. 1832, 423 (“coast of the United States”).
38. *MERGELLUS ALBELLUS* (Linn.) Selby.—*Mergus albellus*, WILS. Am. Orn. iii. pl. lxxi. fig. 4 (New England and New York; numerous).—NUTT. Man. ii. 1832, 467.—AUD. Orn. Biog. iv. 350; B. Am. vi. 1843, 408, pl. 414 (“Lake Barataria, not far from New Orleans”).
39. *PHALACROCORAX GRACULUS* (Linn.) Leach.—NUTT. Man. ii. 1832, 484 (“South of Greenland”; United States in winter).
40. *Phalacrocorax pygmaeus*, Pall.—NUTT. Man. ii. 1832, 487 (Northern North America, *fd*e Bonaparte).
41. *Phalacrocorax africanus* (Gmel.) Dumont.—NUTT. Man. ii. 1832, 488 (“United States”, *fd*e Audubon).
42. *LARUS FUSCUS*, Linn.—NUTT. Man. ii. 1832, 302 (Greenland, Newfoundland, and Hudson’s Bay).—SAUNDERS, P. Z. S. 1875, 158 (Lower California; error? probably *L. occidentalis*).

43. *LARUS CAPISTRATUS*, Temm.—NUTT. Man. ii. 1832, 290 (Delaware R. and Chesapeake Bay).
44. *LARUS MINUTUS*, Pall.—SW. & RICH. F. B. A. ii. 1831, 426 (given on Sabine's authority).—NUTT. Man. ii. 1832, 289.—*Chroicocephalus minutus*, LAWR. in Baird's B. N. Am. 1858, 853.—BAIRD, Cat. 1859, No. 671.
45. *DIOMEDEA EXULANS*, Linn.—NUTT. Man. ii. 1832, 340 ("accidentally to the coasts of the central part of the Union").—LAWR. in Baird's B. N. Am. 1858, 821.—BAIRD, Cat. 1859, No. 630.
46. *PODICEPS CRISTATUS* (Linn.) Lath.—SW. & RICH. F. B. A. ii. 1831, 410 (throughout fur countries).—NUTT. Man. ii. 1832, 250.—LAWR. in Baird's B. N. Am. 1858, 893.—BAIRD, Cat. 1859, No. 703.
47. *TACHYBAPTES MINOR* (Linn.) Cones.—*Podiceps minor*, NUTT. Man. ii. 1832, 257 (Hudson's Bay).

1. *Partial list of foreign birds which have been introduced to the United States, and those which have been captured after escape from confinement.*

SPECIES INTRODUCED WITH A VIEW TO THEIR NATURALIZATION.\*

1. *PASSER DOMESTICUS* (Linn.) Leach. European House Sparrow. The attempted naturalization of this bird has proved decidedly successful. The case is so notorious that further comment is unnecessary.
2. *PASSER MONTANUS* (Linn.) Stephens. European Tree Sparrow. Has become naturalized in the vicinity of Saint Louis, Mo., but the history of its introduction is unknown.
3. *ALAUDE ARVENSIS*, Linn. Skylark. Partially naturalized in the vicinity of Cincinnati, on Long Island, and perhaps other localities.
4. *COTURNIX COMMUNIS* (Linn.) Bonn. European Quail. Introduced to various localities in the Eastern United States, and partially naturalized.

SPECIES WHICH HAVE BEEN CAPTURED AFTER ESCAPE FROM CONFINEMENT.†

1. *AMADINA RUBRO-NIGRA*, Hodgs. Brunswick, Me., March, 1879; Leslie A. Lee. (ALLEN, Bull. Nutt. Orn. Club, April, 1880, 119.) *Hab.* India.
2. *CRITHAGRA BUTYRACEA* (Linn.) Gray. South Scituate, Mass., in midwinter. (BREWER, Proc. Bost. Soc. xx. 271.) *Hab.* South Africa.
3. *LIGURINUS CHLORIS* (Linn.) Koch. Lowville, Lewis Co., N. Y., March 19, 1878; R. B. Hough. (Cf. Bull. Nutt. Orn. Club, Apr. 1880, 119.) *Hab.* Europe.
4. *CARDUELIS ELEGANS*, Steph. Eastern Massachusetts, many captures. (ALLEN, Bull. Nutt. Orn. Club, Apr. 1880, 120.) *Hab.* Europe.
5. *SERINUS MERIDIONALIS*, Brehm. Western Massachusetts, in winter. (ALLEN, l. c.) *Hab.* Europe.
6. *GUBERNATRIX CRISTATELLA*, Vieill. Near Providence, R. I., July 7, 1880. (ALLEN, Bull. Nutt. Orn. Club, Oct. 1880, 240.) *Hab.* Paraguay and Argentine Republic.
7. *CORVUS FRUGILEGUS*, Linn. Washington, D. C., August, 1879.  
An example of this species was seen by me in August, 1879, in the grounds of the Agricultural Department in Washington. It was perched in a maple tree near one of the outbuildings, was very tame, and flew laboriously, as if very recently escaped from confinement. I am, as yet, ignorant of the history of this specimen, nor have I since seen it.
8. *CONURUS XANTHOGENIUS*, Bp. *Hab.* St. Thomas, West Indies.  
An example of this species, shot in a grove near Washington, by Dr. D. W. Prentiss, is in the National Museum collection. Of course it was an escaped cage-bird.
9. *CALLIPSITTACUS NOVÆ-HOLLANDIÆ* (Gm.) Finch. Sing Sing, N. Y.‡ *Hab.* Australia!
10. *CHENALOPEX ÆGYPTIACA* (Linn.) Steph. Carnarsie, Long Island, Jan. 3, 1877. (AKHURST, Bull. Nutt. Orn. Club, ii. Apr. 1877, 52.) *Hab.* Southern Europe and Africa.

\* This list does not include domesticated birds.

† This list is, of course, very incomplete; it includes merely a few species, the records of whose capture I happen to have at hand. A more complete list would be desirable, but want of time forbids its compilation in the present connection.

‡ Dr. A. K. Fisher, its capt.

## ADDENDA.

The following additional species have been described as new to science or to the North American fauna since the preceding pages were printed, and include all the accessions up to January 1, 1881:

29. *POLIOPTILA CALIFORNICA* Brewster. Black-tailed Gnatcatcher. In the first edition of this catalogue this species was given as *P. melanura* Lawr. (Black-capped Gnatcatcher). Mr. W. Brewster, however, has recently determined that *P. melanura* Lawr. was based upon the fully adult male of *P. plumbea*, and is therefore a synonym of that species. The Californian bird being unnamed, Mr. Brewster proposes for it the name *californica*, as above. (See Bull. Nutt. Orn. Club. Apr. 1881.)
- 78\*. *HELMINTHOPHAGA CININNATIENSIS* Langdon. Cincinnati Warbler.—*Cf.* Jour. Cinc. Soc. N. H. July, 1880, 119, 120, pl. iv; Bull. Nutt. Orn. Club, v. Oct. 1880, 208, pl. viii. This bird is intermediate in coloration and proportions between *Helminthophaga pinus* and *Oporornis formosa*, and may be a hybrid of the two, as suggested by the writer in Bull. Nutt. Orn. Club, v. Oct. 1880, 237.
377. *MELANERPES FORMICIVORUS BAIRDI*. Californian Woodpecker.—In *Hist. N. Am. Birds* (vol. ii. p. 561), the Californian and Mexican specimens of this species were separated as geographical races on account of certain well-marked differences, and the name *striatipectus* proposed for the latter. Since it appears, however, that Swainson's name *formicivorus* was based upon specimens from southern Mexico, *striatipectus* becomes a synonym. The Californian form being without a distinctive name (*melanopogon* Temm. equalling *formicivorus* Swainson.), I take great pleasure in dedicating it to Professor Baird. *M. formicivorus bairdi* replaces the true *M. formicivorus* throughout western Mexico, down to Colima at least, the other race, *angustifrons* Baird, being peculiar to Lower California.
- 542\*. *EURINORHYNCHUS PYGMÆUS* (Linn.) Pearson. Spoon-billed Sandpiper.—Point Barrow, Arctic coast of Alaska, *vide* Dr. T. H. Bean.
- 580\*. *FULICA ATRA* Linn. European Coot.—A specimen in the Copenhagen Museum obtained in Greenland in 1876. (Dr. J. Reinhardt, in *epist. vide* P. E. Freke.)
- 616\*. *FULIGULA RUFINA* (Pall.) Steph. Rufous-crested Duck.—Fulton Market, New York, Feb. 1872; G. A. Boardman. Specimen in U. S. National Museum.

*Table of families of North American birds, showing number of genera and species of each according to the foregoing catalogue.\**

	Numbers of the cata- logue.	Number of gen- era.	Number of spe- cies.†
1. <i>Turdidæ</i> .....	1-18	8	18 + 8 = 26
2. <i>Cinclidæ</i> .....	19	1	1
3. [ <i>Luscinidæ</i> ] .....	20	1	1
4. <i>Saxicolidæ</i> .....	21-24	2	4
5. <i>PTILOGONATIDÆ</i> .....	25-26	2	2
6. <i>Sylviidæ</i> .....	27-34	3	8 + 1 = 9
7. <i>Chamaeidæ</i> .....	35	1	1
8. <i>Paridæ</i> .....	36-50	4	15 + 3 = 18
9. <i>Sittidæ</i> .....	51-54	1	4 + 1 = 5
10. <i>Certhiidæ</i> .....	55	1	1 + 1 = 2
11. <i>Troglodytidæ</i> .....	56-68	9	13 + 9 = 22
12. <i>Motacillidæ</i> .....	69-73	4	5
13. <i>MNIOTITIDÆ</i> .....	74-134	18	61 + 8 = 69
14. <i>VIREONIDÆ</i> .....	135-147	3	13 + 3 = 16
15. <i>Laniidæ</i> .....	148-149	1	2 + 2 = 4
16. <i>Ampelidæ</i> .....	150-151	1	2
17. <i>Hirundinidæ</i> .....	152-158	6	7 + 1 = 8
18. <i>CÆREBIDÆ</i> .....	159	1	1
19. <i>TANAGRIDÆ</i> .....	160-164	2	5 + 1 = 6
20. <i>Fringillidæ</i> .....	165-256	36	91 + 35 = 126
21. <i>ICTERIDÆ</i> .....	257-278	8	22 + 5 = 27
22. [ <i>Sturnidæ</i> ] .....	279	1	1
23. <i>Corvidæ</i> .....	280-298	9	19 + 7 = 26
24. [ <i>Alaudidæ</i> ] .....	299-300	2	2 + 2 = 4
25. <i>TYRANNIDÆ</i> .....	301-331	11	31 + 2 = 33
26. <i>COTINGIDÆ</i> .....	332-333	2	2
27. <i>TROCHILIDÆ</i> .....	334-348	10	15
28. <i>Cypselidæ</i> .....	349-352	3	4
29. <i>Caprimulgidæ</i> .....	353-358	5	6 + 2 = 8
30. <i>Picidæ</i> .....	359-380	10	22 + 10 = 32
31. <i>MOMOTIDÆ</i> .....	381	1	1
32. <i>Alcedinidæ</i> .....	382-383	1	2
33. <i>Trogonidæ</i> .....	384	1	1
34. <i>Cuculidæ</i> .....	385-390	3	6
35. <i>Psittacidæ</i> .....	391-393	2	3
36. <i>Strigidæ</i> .....	394-411	12	18 + 11 = 29
37. <i>Falconidæ</i> .....	412-452	23	41 + 12 = 53
38. <i>CATHARTIDÆ</i> .....	453-455	3	3
39. <i>Columbidæ</i> .....	456-468	10	13
40. <i>CRACIDÆ</i> .....	469	1	1
41. <i>MELEAGRIDÆ</i> .....	470	1	1 + 1 = 2
42. <i>Tetraonidæ</i> .....	471-479	6	9 + 7 = 16
43. <i>Perdicidæ</i> .....	480-485	5	6 + 3 = 9
44. <i>Ardeidæ</i> .....	486-498	11	13
45. <i>Ciconiidæ</i> .....	499-500	2	2
46. <i>Ibididæ</i> .....	501-504	2	4
47. <i>Plataleidæ</i> .....	505	1	1
48. <i>Hæmatopodidæ</i> .....	506-508	1	3
49. <i>Streptidæ</i> .....	509-511	2	3
50. <i>Charadriidæ</i> .....	512-523	7	12 + 2 = 14
51. <i>Scolopacidæ</i> .....	524-562	21	39 + 4 = 43
52. <i>Phalaropodidæ</i> ..	563-565	3	3
53. <i>Recurvirostridæ</i> ..	566-567	2	2
54. <i>Parridæ</i> .....	568	1	1
55. <i>Rallidæ</i> .....	569-580	6	12 + 2 = 14
56. <i>ARAMIDÆ</i> .....	581	1	1
57. <i>Gruidæ</i> .....	582-584	1	3

\* Families peculiar to America in small capitals peculiar to North America in italics. Palearctic families not represented by a peculiar species in America are placed in brackets.

† The figures following the sign + denote the number of recognized races not distinguished by a separate number in the catalogue; those in the last column the total of species and races.



Table of families of North American birds—Continued.

	Numbers of the catalogue.	Number of genera.	Number of species.
58. Phœnicopteridæ .....	585	1	1
59. Anatidæ .....	586-638	30	53 + 6 = 59
60. Tachypetidæ .....	639	1	1
61. Pelecanidæ .....	640-641	1	2
62. Phalacrocoracidæ .....	642-648	1	7 + 3 = 10
63. Plotidæ .....	649	1	1
64. Sularidæ .....	650-653	1	4
65. Phaethontidæ .....	654-656	1	2
66. Rhynchopsidæ .....	656	1	1
67. Laridæ .....	657-695	9	39 + 2 = 41
68. Stercorariidæ .....	696-699	2	4
69. Procellariidæ .....	700-728	15	29 + 2 = 31
70. Podicipitidæ .....	729-735	5	7 + 1 = 8
71. Colymbidæ .....	736-740	1	5
72. Alcidæ .....	741-764	14	24 + 3 = 27

SUMMARY.

Number of genera.....	379
Number of species.....	764
Number of subspecies .....	160

CONCORDANCE.

No. of old catalogue.	No. of new catalogue.	No. of old catalogue.	No. of new catalogue.	No. of old catalogue.	No. of new catalogue.	No. of old catalogue.	No. of new catalogue.	No. of old catalogue.	No. of new catalogue.	No. of old catalogue.	No. of new catalogue.
1	454	35	427	69	387	102	336	135	315	167	74
2	453	36	428	70	388	103	340	136	316	167 <sub>a</sub>	74 <sub>a</sub>
3	455	37	429	71	386	104	339	137	318	168	88
4	—	38	430	72	359	105	338	138	321	169	75
5	414	39	449	73	—	106	337	139	320	170	122
6	414	40	—	74	360	107	349	140	325 <sub>a</sub>	171	—
7	417	41	451	75	360 <sub>b</sub>	108	350	141	325	172	120
8	415	42	452	76	361	109	351	142	326	173	121
9	419	43	451	77	361 <sub>a</sub>	110	352	143	324	174	118
10	413	44	425	78	364	111	353	144	322	175	119
11	412	45	423	79	363	112	354	144 <sub>a</sub>	323	176	123
12	412 <sub>a</sub>	46	434	80	362	113	355	145	327	177	123 <sub>a</sub>
13	420	47	394	81	366	114	357	146	328	178	77
14	433	48	405	82	367	115	357 <sub>a</sub>	147	330	179	76
15	431	49	402	83	368	116	358	148	1	180	79
16	431	50	402 <sub>b</sub>	84	368 <sub>a</sub>	116 <sub>a</sub>	356	149	5 <sub>b</sub>	181	81
17	432	51	395	85	369	117	382	149 <sub>a</sub>	5 <sub>a</sub>	182	78
18	442	52	396	86	369 <sub>a</sub>	118	383	150	5	183	85
19	442	53	399	87	369 <sub>b</sub>	119	381	151	2	183 <sub>a</sub>	84
20	436 <sub>b</sub>	54	397	88	370	120	333	152	4	184	86
21	442	55	400	89	370	121	332	153	4 <sub>a</sub>	185	87
22	438	56	401	90	371	122	302	154	3	186	115
23	436	57	401	91	372	123	301	155	7	187	116
24	436 <sub>b</sub>	58	408	92	373	124	304	156	9	188	117
25	439	59	408	93	374	125	303	157	21	189	107
26	439 <sub>a</sub>	60	409	94	375	126	306	158	22	190	109
27	443	61	406	95	377	127	307	159	23	191	108
28	442	62	407	96	376	128	305	160	24	192	105
29	437	63	392	97	378	129	—	161	30	193	94
30	447	64	391	98	378 <sub>b</sub>	130	312	162	33	194	95
31	447	65	384	98 <sub>a</sub>	378 <sub>a</sub>	131	313	163	32	195	96
32	448	66	389	99	379	132	311	164	19	196	102
33	445	67	389	100	—	133	314	165	71	197	100
34	426	68	385	101	335	134	317	166	73	198	111

## Concordance—Continued.

No. of old cat- alogue.	No. of new cat- alogue.	No. of old cat- alogue.	No. of new cat- alogue.	No. of old cat- alogue.	No. of new cat- alogue.	No. of old cat- alogue.	No. of new cat- alogue.	No. of old cat- alogue.	No. of new cat- alogue.	No. of old cat- alogue.	No. of new cat- alogue.
199	112	259	15	318	172	378	254	440	295	500	508
200	99	259 <sub>a</sub>	15	318 <sub>a</sub>	172 <sub>a</sub>	379	255	441	294	500 <sub>a</sub>	504
201	98	260	13 <sub>a</sub>	319	173	380	244	442	296	501	505
202	101	261	13	320	179	381	245	443	297	502	—
203	93	261 <sub>a</sub>	13	321	178	382	246	444	298	503	515
204	97	262	56	322	175	383	247	445	299	504	516
205	110	263	59 <sub>a</sub>	323	174	384	251	446	295	505	522
206	90	264	58	324	—	385	250	447	296	506	523
207	91	265	60	325	186	386	249	448	297	507	517
208	113	266	60 <sub>a</sub>	326	187	387	248	449	298	508	520
209	103	267	61	327	188	388	252	450	299	509	521
210	114	268	67	328	189	389	243	451	300	510	513
211	124	269	68	329	189	390	244	452	301	511	511
212	126	270	63	330	190	391	237	453	302	512	507
213	125	271	63 <sub>a</sub>	331	191	392	238 <sub>b</sub>	454	303	513	508
214	127	272	63	332	193 <sub>a</sub>	393	238	455	304	514	—
215	127	273	65	333	193	394	238 <sub>a</sub>	456	305	515	509
216	132	274	35	334	194	395	241	457	306	516	510
217	128	275	55	335	193 <sub>b</sub>	396	240 <sub>b</sub>	458	307	517	506
218	129	276	55 <sub>a</sub>	336	196	397	240	459	308	518	507
219	130	277	51	337	197	398	239	460	309	519	505
220	161	278	51 <sub>a</sub>	338	198	399	257	461	310	520	504
221	164	279	52	339	199	400	258	462	311	521	503
222	163	280	53	340	200	401	261	463	312	522	505
223	162	281	54	341	201	402	261 <sub>a</sub>	464	313	523	506 <sub>a</sub>
224	160	282	27	342	202	403	262	465	314	524	507
225	154	283	28	343	231 <sub>c</sub>	404	260	465 <sub>a</sub>	315	525	507 <sub>a</sub>
226	153	284	29	344	204	405	—	466	316	526	508
227	155	285	36	345	206	406	263	467	317	527	535
228	156	286	37	346	207 <sub>a</sub>	407	264	468	318	528	539
229	157	287	38	347	208	408	265	469	319	529	540
230	158	288	39	348	205	409	266	470	320	530	539 <sub>a</sub>
231	152	289	41 <sub>a</sub>	349	209	410	—	471	321	531	534
231 <sub>a</sub>	152 <sub>a</sub>	289 <sub>a</sub>	41 <sub>a</sub>	350	222	411	268	472	322	532	538
232	150	290	41	351	221	412	267	473	323	533	536
233	151	291	41 <sub>b</sub>	352	218	413	269	474	324	534	542
234	26	292	43	353	220	414	270	475	325	535	541
235	25	293	42	354	217	415	271	476	326	536	542
236	148	294	40	355	224	416	272	477	327	537	543
237	149	295	46	356	225	417	273	478	328	538	547
238	149 <sub>a</sub>	296	45	357	210	418	274	479	329	539	548
239	—	297	49	358	214	419	275	480	330	540	549
240	135	298	47	359	211	420	277	481	331	541	550
241	136	299	48	360	212	421	278	482	332	542	553
242	—	300	50	361	213	422	278 <sub>a</sub>	483	333	543	557
243	137	301	159	362	215	423	280	484	334	544	554
244	138	302	300	363	331	424	280	485	335	545	555
245	139	303	165	364	231 <sub>b</sub>	425	281	486	336	546	556
246	145	304	166	365	231 <sub>c</sub>	426	282	486 <sub>a</sub>	337	547	553
247	142	305	168	366	231 <sub>d</sub>	427	282 <sub>a</sub>	487	338	548	545
248	143	306	168 <sub>a</sub>	367	231 <sub>a</sub>	428	282 <sub>b</sub>	488	339	549	558
249	144	307	169	368	234	429	283	489	340	550	559
250	141	308	170	369	233	430	284	490	341	551	560
251	141 <sub>a</sub>	209	—	370	226	431	285	491	342	552	560
252	140	301	184	371	228	432	286	492	343	553	571
253	11	311	—	372	230	433	287	493	344	554	572
253 <sub>a</sub>	11	312	—	373	236	434	289	494	—	555	574
254	12	313	181	374	235	435	290	495	345	556	576
255	10	314	182	375	235 <sub>a</sub>	436	290 <sub>c</sub>	496	346	557	575
256	16	315	182 <sub>a</sub>	376	235 <sub>c</sub>	437	293	497	500	558	577
257	16 <sub>a</sub>	316	183	376 <sub>a</sub>	235 <sub>b</sub>	438	292	498	502	559	580
258	17	317	185	377	256	439	291	499	501	560	579

*Concordance—Continued.*

No. of old cat- alogues.	No. of new cat- alogues.	No. of old cat- alogues.	No. of new cat- alogues.	No. of old cat- alogues.	No. of new cat- alogues.	No. of old cat- alogues.	No. of new cat- alogues.	No. of old cat- alogues.	No. of new cat- alogues.	No. of old cat- alogues.	No. of new cat- alogues.
561	578	589	615	620	642	651	706	681	679	710	741
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Department of the Interior:

U. S. NATIONAL MUSEUM.

— 26 —

# BULLETIN

OF THE

UNITED STATES NATIONAL MUSEUM

NO. 22.—GUIDE TO THE FLORA OF WASHINGTON  
AND VICINITY.

WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1881.



**Department of the Interior:**

**U. S. NATIONAL MUSEUM.**

— 26 —

# **BULLETIN**

**OF THE**

**UNITED STATES NATIONAL MUSEUM.**

**No. 22.**

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**PUBLISHED UNDER THE DIRECTION OF THE SMITHSONIAN INSTITUTION.**

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**WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1881.**

### ADVERTISEMENT.

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This work is the twenty-sixth of a series of papers intended to illustrate the collections of natural history and ethnology belonging to the United States, and constituting the National Museum, of which the Smithsonian Institution was placed in charge by the act of Congress of August 10, 1846.

It has been prepared at the request of the Institution, and printed by authority of the honorable Secretary of the Interior.

SPENCER F. BAIRD,

*Secretary of the Smithsonian Institution.*

SMITHSONIAN INSTITUTION,

*Washington, July 1, 1881.*

**GUIDE**  
**TO**  
**THE FLORA**  
**OF**  
**WASHINGTON AND VICINITY.**

**BY**  
**LESTER F. WARD, A. M.**

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**WASHINGTON:**  
**GOVERNMENT PRINTING OFFICE.**  
**1881.**





## PREFACE.

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The outline of this work was presented as a communication to the Philosophical Society of Washington, January 22, 1881. The aim of the writer was to furnish a guide to botanists in exploring the locality and an aid to beginners in practical botany. To this latter class the appendix is especially addressed, but as it is equally applicable to other localities, and as nothing, it is believed, analogous to it has been published, it may be found useful outside of Washington. The introduction also contains suggestions which, if followed in a sufficient number of localities by those preparing local catalogues, would greatly aid in making the botanists of the country acquainted with the geographical distribution of plants throughout the United States and the special peculiarities of certain regions.

The manifest imperfections of the treatise may not be without their uses in stimulating local collectors and others to correct them and produce something better.

In the investigation of the flora of Washington, so many able and active botanists and so many energetic amateurs have co-operated that it would almost seem invidious to single out any as the subjects of special thanks, and it has been deemed the most equitable plan to give special credit to the first discoverer of each rare plant, wherever this can be known, under its proper head in the detailed enumeration. I cannot, however, refrain from expressing my special obligations to Dr. George Treasey, Botanist to the Department of Agriculture, for his kindness in placing the National Herbarium at my disposal and in examining and reporting upon many critical and puzzling forms, especially in the Cyperaceæ and Gramineæ. I also desire to acknowledge in an especial manner the valuable services of Mr. M. S. Bebb, of Rockford, Ill., in identifying the local *Salices*, which, though comparatively few, are very interesting and in a high degree confusing to any but a trained specialist like Mr. Bebb.

Prof. J. W. Chickering, jr., of the Columbia Deaf and Dumb Institute, in addition to much other valuable assistance, has kindly looked over the proofs as they came from the press and suggested many important additions and improvements, for which service my special thanks are due.

L. F. W.

WASHINGTON, *December 25*, 1881.

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## I. INTRODUCTORY REMARKS.

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This monograph has resulted from a suggestion made to the writer in the spring of 1880 by a member\* of the Committee on Publications of the Philosophical Society of Washington, relative to the preparation of a revised catalogue of the plants of this vicinity. While there now exists a provisional catalogue, containing most of the species which have been collected or observed by botanists during the past six or seven years, it consists of so many small annual accretions, due to constant new discoveries, and contains withal so many blemishes and imperfections incident to its hasty compilation and irregular growth, that it has ceased in great part to meet the demands of the present time. The elaboration of a systematic catalogue of the local flora was not, however, at the outset at all contemplated, but merely the presentation of certain notes and special observations on particular species, which had been made in the course of some nine years of pretty close attention to the vegetation and somewhat varied and exhaustive field studies in this locality. The flowering-time of most species here is much earlier than that given in the manuals, and is, moreover, in many cases, very peculiar and anomalous, rendering it important to collectors, as well as interesting to botanists, to have it definitely stated for a large proportion of the plants. It being thus necessary to extend the enumeration so far, it was thought that the remainder might as well be added, thus rendering it a complete catalogue of all the vascular plants known to exist here at the present time. To these has been appended the list of *Musci* and *Hepaticæ* prepared by the late Mr. Rudolph Oldberg for the *Flora Columbiana*, which is inserted unchanged, except in so far as was required to make it conform strictly to the work of Sullivant, which has long been the standard for this country.

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\* Prof. Cleveland Abbe.

Dr. E. Foreman has also furnished the names of a few of the *Characeæ* collected here by himself, and named by Professor Farlow of Cambridge, which, in the present unsettled state of the classification of the Cryptogams, have for convenience been placed at the foot of the series.

In undertaking this compilation I have endeavored to resist the usual temptation of catalogue-makers to expand their lists beyond the proportions which are strictly warranted by the concrete facts as revealed by specimens actually collected or species authentically observed, but have been content to set down only such as I can either personally vouch for or as are vouched for by others who have something more substantial than memory to rely upon, preferring that a few species actually occurring, but not yet seen, should be omitted and afterwards supplied, rather than that others supposed to exist, but which cannot be found, should stand in our flora to be apologized for to those who would be glad to obtain them. A few species, however, which are positively known to have once occurred within our limits, but which have been obliterated in the course of the constant changes taking place, have been retained, as well as several of which only a single specimen has been found; but in all such cases the facts are fully stated in the notes accompanying each plant.

## II. RANGE OF THE LOCAL FLORA.

The extent of territory which has of late years been tacitly recognized by botanists here as constituting the area of what has been called the "Flora Columbiana" is limited on the north by the Great Falls of the Potomac, and on the south by the Mount Vernon Estate, in Virginia, and Marshall Hall, just opposite this on the Maryland side of the river, while it may reach back from the river as far as the divide to the east, where the waters fall into the Chesapeake Bay, and as far westward as the foot of the Blue Ridge, so as not to embrace any of the peculiarly mountain forms. Practically, however, the east and west range is much less than this, and only extends a few miles in either direction. The only three cases in which these limits are overstepped in this catalogue are in including: 1. *Draba ramosissima*, not yet collected this side of Harper's Ferry, but which may be confidently looked for; 2. *Filago Germanica*, collected at Occoquan Falls, and liable to be found farther north; and 3. *Poterium Sanguisorba*, obtained from Odenton, Md., an introduced species which may yet be found nearer home.

## III. COMPARISON OF THE FLORA OF 1830 WITH THAT OF 1880.

Washington and its vicinity has long been a field of botanical research. The year 1825 witnessed the dissolution of the "Washington Botanical Society," which had for many years cultivated the science, and the same year also saw the formation of the "Botanic Club," which continued the work, and in one respect at least excelled the former in usefulness, since it handed down to us of the present generation, a valuable record in the form of a catalogue of the plants then known to exist in this locality. This catalogue, which was fittingly entitled *Floræ Columbianæ Prodrômus*, and claimed to exhibit "a list of all the plants which have as yet been collected," though now rare and long out of print, is still to be found in a few botanical libraries. I have succeeded in securing a copy of this work, and have been deeply interested in comparing the results then reached with those which we are now able to present. A few of these comparisons are well worth reproducing. It should be premised that the *Prodrômus* is arranged on the artificial system of Linnæus, so that before the plants could be placed in juxtaposition with those in modern works they required to be rearranged. This, however, was not the principal difficulty. Such extensive changes have taken place in the names of plants during the fifty years which have elapsed since that work appeared (1830), that it is only with the greatest difficulty that they can be identified. I have succeeded in identifying the greater part of them, and in thus ascertaining about to what extent the two lists are in unison. This also reveals the extent to which each overlaps the other, and thus affords a sort of rude index to the changes which our flora has undergone in half a century. There are, however, as will be seen, many qualifying considerations which greatly influence these conclusions and diminish the value of the data compared.

The whole number of distinct names (species and varieties) enumerated in the *Prodrômus* is 919. Of these, 59 are mere synonyms or duplicate names for the same plant, leaving 860 distinct plants. I have succeeded in identifying 708 of these with certainty as among those now found, and these are marked in the general catalogue by the sign (†). Six others, not yet clearly identified, should probably be placed in this class. This leaves 146 enumerated in the old catalogue which have not been found in recent investigations. The importance of these 146 plants as pointing out the direction of future search, and also as indicating the disappearance of former species, justifies their enumeration.

here. The names employed are the modern ones to which the old synonymy has been reduced.

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| (1) <i>Ranunculus multifidus</i> , Pursh.  | (2) <i>Pyrus Americana</i> , DC.                                       |
| (4) <i>Actæa alba</i> , Bigelow.           | (4) <i>Henckera villosa</i> , Michx.                                   |
| (2) <i>Calycanthus glaucus</i> , Willd.    | (2) <i>Hydrangea radiata</i> , Walt.                                   |
| (4) <i>Magnolia acuminata</i> , L.         | (4) <i>Tiarella cordifolia</i> , L.                                    |
| (4) <i>Berberis Canadensis</i> , Pursh.    | (4) <i>Sedum pulchellum</i> , Michx.                                   |
| (4) <i>Nelumbium luteum</i> , Willd.       | (4) <i>Diamorpha pusilla</i> , Nutt.                                   |
| (4) <i>Argemone Mexicana</i> , L.          | (1) <i>Hippuris vulgaris</i> , L.                                      |
| (1) <i>Corydalis glauca</i> , Pursh.       | (4) <i>Rhexia Mariana</i> , L.   |
| (1) <i>Corydalis aurea</i> , Willd.        | (3) <i>Aralia hispida</i> , Ventenat.                                  |
| (1) <i>Nasturtium amphibium</i> , R. Br.   | (4) <i>Aralia quinquefolia</i> , Decne.                                |
| (1) <i>Arabis stricta</i> , Huds.          | (1) <i>Liatris spicata</i> , Willd.                                    |
| (1) <i>Draba arabisans</i> , Michx.        | (1) <i>Liatris pycnostachya</i> , Michx.                               |
| (4) <i>Draba Caroliniana</i> , Walt.       | (1) <i>Aster divaricatus</i> , Nutt.                                   |
| (2) <i>Gynandropsis pentaphylla</i> , DC.  | (1) <i>Diplopappus amygdalinus</i> , T. & G.                           |
| (3) <i>Lechea major</i> , Michx.           | (1) <i>Solidago virgata</i> , Michx.                                   |
| (4) <i>Viola blanda</i> , Willd.           | (1) <i>Pterocaulon pycnostachyum</i> , Ell.                            |
| (3) <i>Polygala lutea</i> , L.             | (4) <i>Helianthus tomentosus</i> , Michx.                              |
| (1) <i>Polygala setacea</i> , Michx.       | (1) <i>Helianthus trachelifolius</i> , Willd.                          |
| (4) <i>Polygala cruciata</i> , L.          | (4) <i>Coreopsis rosea</i> , Nutt.                                     |
| (4) <i>Polygala verticillata</i> , L.      | (4) <i>Senecio vulgaris</i> , L.                                       |
| (3) <i>Polygala paucifolia</i> , Willd.    | (1) <i>Oniscus pumilus</i> , Torr.                                     |
| (4) <i>Silene inflata</i> , Sm.*           | (4) <i>Carduus defloratus</i> , L. ( <i>C. pectinatus</i> , L. mant.). |
| (4) <i>Silene Virginica</i> , L.           | (1) <i>Lobelia Kalmii</i> , L.   |
| (1) <i>Silene regia</i> , Sims.            | (4) <i>Lobelia Nuttallii</i> , Roem. & Schult.                         |
| (4) <i>Spergula arvensis</i> , L.          | (4) <i>Campanula aparinoides</i> , Pursh.                              |
| (4) <i>Scleranthus annuus</i> , L.         | (3) <i>Arctostaphylos Uva-ursi</i> , Spreng.                           |
| (1) <i>Hypericum galioides</i> , Lam.      | (1) <i>Andromeda polifolia</i> , L.                                    |
| (1) <i>Hypericum myrtifolium</i> , Lam.    | (3) <i>Cassandra calyculata</i> , Don.                                 |
| (2) <i>Hypericum aureum</i> , Barton.      | (1) <i>Kalmia glauca</i> , Ait.  |
| (4) <i>Geranium Robertianum</i> , L.       | (4) <i>Fraxinus sambucifolia</i> , Lam.                                |
| (4) <i>Baptisia alba</i> , R. Br.          | (4) <i>Apocynum androsæmifolium</i> , L.                               |
| (4) <i>Æschynomene hispida</i> , Willd.    | (4) <i>Asclepias phytolaccoides</i> , Pursh.                           |
| (4) <i>Desmodium Canadense</i> , DC.       | (4) <i>Asclepias tomentosa</i> , Ell.                                  |
| (1) <i>Desmodium glabellum</i> , DC.       | (1) <i>Gonolobus Carolinensis</i> , R. Br.                             |
| (1) <i>Vicia Cracca</i> , L.               | (4) <i>Spigelia Marilandica</i> , L.                                   |
| (1) <i>Vicia Americana</i> , Muhl.         |  |
| (4) <i>Centrosema Virginianum</i> , Benth. |  |
| (3) <i>Gillenla stipulacea</i> , Nutt.     |  |
| (1) <i>Geum radiatum</i> , Michx.          |  |
| (1) <i>Rosa blanda</i> , Ait.              |  |
| (4) <i>Cratægus tomentosa</i> , L.         |  |

\* Professor Chickering has found this on Sugar Loaf Mountain.



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| <p>(4) <i>Sabbatia gracilis</i>, Salisb.<br/> (4) <i>Frasera Carolinensis</i>, Walt.<br/> (4) <i>Heliotropium Europæum</i>, L.<br/> (4) <i>Heliotropium Indicum</i>, L.<br/> (4) <i>Lithospermum latifolium</i>, Michx.<br/> (4) <i>Onosmodium Carolinianum</i>, DC., var. <i>molle</i>, Gray.<br/> (1) <i>Ipomœa commutata</i>, Rœm. &amp; Schult.<br/> (1) <i>Solanum Virginianum</i>, L.<br/> (2) <i>Solanum Dulcamara</i>, L.<br/> (1) <i>Physalis lanceolata</i>, Michx.<br/> (2) <i>Verbascum nigrum</i>, L.<br/> (4) <i>Gratiola aurea</i>, Muhl.<br/> (4) <i>Gerardia quercifolia</i>, Pursh.<br/> (4) <i>Gerardia auriculata</i>, Michx.<br/> (1) <i>Utricularia minor</i>, L.<br/> (2) <i>Martynia proboscidea</i>, Glox.<br/> (2) <i>Calophanes oblongifolia</i>, Don.<br/> (1) <i>Verbena Caroliniana</i>, Michx.<br/> (1) <i>Lippia nodiflora</i>, Michx.<br/> (4) <i>Trichostema lineare</i>, Nutt.<br/> (4) <i>Pycnanthemum aristatum</i>, Michx.<br/> (4) <i>Monarda didyma</i>, L.<br/> (4) <i>Scutellaria parvula</i>, Michx.<br/> (4) <i>Scutellaria galericulata</i>, L.<br/> (4) <i>Physostegia Virginiana</i>, Benth., var. <i>denticulata</i>, Gray.<br/> (4) <i>Asarum Virginicum</i>, L.<br/> (4) <i>Blitum capitatum</i>, L.<br/> (4) <i>Salicornia herbacea</i>, L.<br/> (4) <i>Polygonum tenue</i>, Michx.<br/> (4) <i>Persea Carolinensis</i>, Nees.<br/> (4) <i>Euphorbia obtusata</i>, Pursh.<br/> (4) <i>Acalypha Caroliniana</i>, Walt.<br/> (4) <i>Celtis occidentalis</i>, L., var. <i>crassifolia</i>, Gray.<br/> (1) <i>Urtica capitata</i>, Willd.<br/> (3) <i>Corylus rostrata</i>, Ait.</p> | <p>(3) <i>Betula lenta</i>, L.<br/> (2) <i>Betula alba</i>, var. <i>populifolia</i>, Sp.<br/> (4) <i>Populus tremuloides</i>, Michx.<br/> (4) <i>Populus heterophylla</i>, L.<br/> (4) <i>Calla palustris</i>, L.<br/> (4) <i>Potamogeton fluitans</i>, Roth.<br/> (4) <i>Sagittaria lancifolia</i>, L.<br/> (1) <i>Habenaria fimbriata</i>, R. Br.<br/> (4) <i>Arethusa bulbosa</i>, L.<br/> (4) <i>Pogonia pendula</i>, Lindl.<br/> (4) <i>Pogonia divaricata</i>, R. Br.<br/> (4) <i>Cypripedium spectabile</i>, Swartz.<br/> (4) <i>Iris Virginica</i>, L.<br/> (1) <i>Polygonatum latifolium</i>, Desf.<br/> (4) <i>Allium striatum</i>, Jacq.<br/> (4) <i>Lilium Philadelphicum</i>, L.<br/> (4) <i>Trillium cernuum</i>, L.<br/> (4) <i>Xyris Caroliniana</i>, Walt.<br/> (4) <i>Pæpalanthus flavidus</i>, Kunth.<br/> (1) <i>Cyperus flavescens</i>, L.<br/> (4) <i>Cyperus flavicomus</i>, Michx.<br/> (4) <i>Cyperus rotundus</i>, L., var. <i>Hydra</i>, Gray.<br/> (1) <i>Carex flava</i>, L.<br/> (1) <i>Carex polymorpha</i>, Muhl.<br/> (1) <i>Carex subulata</i>, Michx.<br/> (1) <i>Carex saxatilis</i>, L.<br/> (3) <i>Spartina stricta</i>, Roth., var. <i>glabra</i>, Gray.<br/> (4) <i>Arundinaria macrosperma</i>, Michx.<br/> (2) <i>Phalaris arundinacea</i>, L.<br/> (4) <i>Paspalum distichum</i>, L.<br/> (1) <i>Cenchrus echinatus</i>, L.<br/> (2) <i>Thuya occidentalis</i>, L.<br/> (4) <i>Cupressus thyoides</i>, L.<br/> (4) <i>Lycopodium clavatum</i>, L.<br/> (4) <i>Chara vulgaris</i>.</p> |
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The other six which have not been satisfactorily identified are printed as follows in the *Prodromus* :

*Gnaphalium Americanum*.  
*Rochelia Virginiana*.  
*Potamogeton diversifolium*.

*Polygonatum latifolium*.  
*Mariscus cylindricus*.  
*Panicum discolor*.

The botanist familiar with this flora will be able to form a judgment more or less correct as to what the plants probably were to which these last names were assigned.

With regard to the 146 species above enumerated, it must not be hastily concluded that they represent the disappearance from our flora of that number of plants. While they doubtless indicate such a movement to a certain extent, there are ample evidences that many of them can be accounted for in other ways. After careful consideration I have been able to divide them into four principal classes as arising out of—

1st. Errors on the part of those early botanists in assigning to them the wrong names.

2d. The introduction into the catalogue of adventitious and even of mere cultivated species never belonging to the flora of the place.

3d. The undue extension by those collectors of the range of the local flora, so as to make it embrace a portion of the maritime vegetation of the Lower Potomac or the Chesapeake Bay, and also the mountain flora of the Blue Ridge.

4th. The actual extermination and disappearance of indigenous plants during the fifty years that have intervened since they made their researches.

The figure placed in parenthesis before each name in the list denotes the class in the order above indicated to which I would assign each one of these species. This assignment is of course in great part conjectural, and may be incorrect in many cases, while another botanist might have differed considerably in regard to special plants; yet it is not based upon a general judgment drawn from my acquaintance with the present flora, but upon several kinds of special evidence, which in numerous instances has reversed my *prima facie* decision. In the first place I have carefully compared the range of each species as given in the text-books to determine the probabilities for or against its being found here, and in the second place I have prepared a corresponding list of plants now found but not enumerated in the *Prodromus* and compared the two lists. I have also endeavored to make due allowance on the one hand for the tendency above referred to, to swell the catalogue as fully as possible, and on the other, for the well known fact that every flora is at all times undergoing changes. It must not be forgotten either that half a century ago the surface of the entire country here must have presented a very different appearance from that which it presents now. The population of the District of Columbia in 1830, when it included a portion of Vir-

ginia, was only 39,834. It is now, exclusive of the Virginia portion re-ceded to that State, 177,638. To render the comparison more exact, we may add to this latter number the present population of Alexandria County, amounting to 17,545, and we have, in place of 39,834, a population on substantially the same area of 195,183, or about five times as large. The population of Maryland in 1830 was 447,040, in 1880 it was 934,632, or considerably more than twice as large; that of Virginia in 1830 was 1,211,405; Virginia and West Virginia, embracing the same territory, now number 2,131,249, the population having not quite doubled; the retardation, however, as compared with Maryland, is doubtless due entirely to influences affecting the southern counties.

There were doubtless large areas of primeval forest then within our limits which are now under cultivation, and a much greater variety of soil and woodland was then open to the researches of the botanist. As a consequence, we ought to expect that it would sustain a much richer flora.

The general results at which I arrive by the process adopted may be summed up as follows:

1st. That 43 of these names, or 29 per cent. of them, belong to the first class and constitute errors in naming.

2d. That 12 of these plants, or 8 per cent., belong to the second class or were simply cultivated species and never belonged to this flora.

3d. That 10 of them, or 7 per cent., belong to the third class and were collected beyond the reasonable limits of our local flora.

4th. That the remaining 81, or 56 per cent., belong to the fourth class, and represent *bona fide* discoveries of species which either do not now occur or are so rare as to have escaped the investigations of the present generation of botanists.

With regard to the first of these classes, the large number of errors in naming cannot be considered any derogation from the ability or fidelity of the compilers of the *Prodromus* or their immediate predecessors, when we remember the very unsettled state that American botany was in at that time. Both names and authorities were badly confused and errors were committed even by the most experienced botanists. In many of the cases the real plant which it was their intention to designate can be readily told, especially after a comparison with their omissions in the same genus. For example, their *Corydalis glauca*,\* as probably also their

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\* This may have represented *Dicentra Cucullaria* not otherwise designated in the *Prodromus*.

*C. aurea*, meant *C. flavula*, which is now abundant, but omitted by them. Their *Arabis stricta* might have been *A. hirsuta* or *A. patens*, which are now rare, though it was more probably a form of *A. laevigata*, as they seemed to be especially fond of drawing nice distinctions and expressing them by synonyms. Varieties, however, were scarcely recognized by them, the trinomial theory being then in its infancy. I might thus proceed to discuss all their supposed errors, but the reader can do this for himself, as the species now known, but which are not contained in the *Prodromus*, are designated in the general catalogue below.

The second and third classes, amounting together to 16 per cent. of the alleged excess over the present flora, consist also of errors, but errors which it is much less easy to palliate. It is natural to wish to make as large a showing as possible, and the temptation to insert into a catalogue everything which by any construction can be claimed to belong there is rarely resisted. To show that this propensity still exists, it may be remarked that of the 1,054 species enumerated in the preliminary catalogue of the plants of this vicinity, published by the *Potomac-Side Naturalists' Club* in 1876, 89, or about 8½ per cent., are now admitted by all not to have been seen here at that time, and have never been found by any one since, although nearly three hundred other species have since been added to the flora. This is certainly not a scientific method to proceed upon, and, as already remarked, the present attempt aims to eliminate to a great extent this source of error.

The 81 species constituting the fourth class remain, therefore, the only ones to which any special interest attaches, and for the determination of which the present somewhat laborious analysis of this ancient document has been undertaken. For these the botanists of our time should make diligent search, and perchance a few of them may still be found. Assuming that they no longer exist, they do not simply represent the number of plants that have disappeared from our flora during an interval of fifty years. This could be only on the assumption that the *Prodromus* was a complete record of the flora at the time. This it certainly is not. The aggregate number, exclusive of synonyms or duplicated names, which it contained was, as we saw, 860. We now identify, counting as was then done, species and varieties, 1,249 distinct forms. While, no doubt, many of these have been freshly appearing, while others have been disappearing, still, from the considerations above set forth, it is highly probable that the indigenous flora of 1830 was considerably larger than that of 1880, and may have reached 1,400 or

1,500 vascular plants. It would appear, therefore, that only a little over half the plants actually existing were discovered by the botanists of that day and enumerated in their catalogue. If the proportion of disappearances could be assumed to be the same for species not discovered as for those discovered by them, this would raise the aggregate number to considerably above one hundred, perhaps to one hundred and twenty-five.

The great number of present known species not enumerated in the *Prodromus*, some of them among our commonest plants, and amounting in the aggregate to 535 species, is another point of interest, since, after due allowance has been made for mistakes in naming them, it remains clear on the one hand that their researches must have been, compared with recent ones, very superficial, and on the other that, not to speak of fresh introductions, many plants now common must have then been very rare, otherwise they would have proved too obtrusive to be thus overlooked.

There are many other interesting facts growing out of a comparison of these two remote dates, but space forbids their further discussion. Any one can pursue the subject who desires to do so, from the data already given and to be given, or by consulting the *Prodromus* itself.

#### IV. LOCALITIES OF SPECIAL INTEREST TO THE BOTANIST.

The flora of a wild region is always more uniform than that of one long subjected to human influences. The diversity in the former is a natural consequence of the corresponding diversity in the surface and other physical features. In the latter it is due to conditions arbitrarily imposed by man. A primeval flora is usually more rich in indigenous species, but the artificial changes caused by cultivation often offset this to a great extent by the introduction of foreign ones. This, however, greatly reduces its botanical interest.

In many respects the botanist looks at the world from a point of view precisely the reverse of that of other people. Rich fields of corn are to him waste lands; cities are his abhorrence, and great open areas under high cultivation he calls "poor country"; while on the other hand the impenetrable forest delights his gaze, the rocky cliff charms him, thin-soiled barrens, boggy fens, and unreclaimable swamps and morasses are for him the finest land in a State. He takes no delight in the "march of civilization," the ax and the plow are to him symbols of barbarism, and the reclaiming of waste lands and opening up of his favorite haunts

to cultivation be instinctively denounced as acts of vandalism. In his more than in any other class of mankind, the poet's injunction,

"Woman, spare that tree,"

touches a responsive chord. While all this may seem as absurd to some as does the withholding from tillage of great pleasure-grounds in the form of hunting-parks for the landed sporting gentry of Northern and Western Europe, still, when these parts of the world are compared with the artificially made deserts of Southeastern Europe and Western Asia, caused by the absence of such sentiments, there may perhaps be duly recognized a "soul of good in things evil," if not a soul of wisdom in things ridiculous.

After the protracted subjection of a country to the conditions of civilization it gradually comes about that while the greater part of the surface falls under cultivation, more or less thorough, and the botanist is ultimately excluded from it, there will remain a few favored spots which from one cause or another will escape and continue to form his favorite haunts. In the vicinity of large rivers, giving greater variety to the surface, or of rugged hills or mountains, this will be especially the case. As a country grows old, large estates in the vicinity of cities fall into the possession of heirs who are engaged in mercantile or professional business and neglect them, or they come into litigation, lasting for years, and are thus happily abandoned to Nature. These and other causes have operated in an especial manner in the surroundings of Washington, and there thus exist a large number of these green oases, as it were, interspersed over the otherwise botanical desert.

In consequence of this fact it requires experience in order to improve the facilities which the place affords. A botanist unacquainted with the proper localities for successful collection might spend a month almost in vain and depart with the conviction that there was nothing here to be found. It may not be wholly peculiar, but these favored localities are here often of very limited extent and in situations which from a distance afford no attraction to the collector. Civilization is, however, very perceptibly encroaching upon many of them, and it is feared that in another half century little will be left but a few bare rocks or inaccessible marshes.

In naming localities the principal authorities relied upon are: 1, a recent *Atlas of fifteen miles around Washington, including the County of Montgomery, Md., Compiled, Drawn, and Published from Actual Surveys*, Hopkins, C. E. Philadelphia, 1879; and 2, a military map

of N. E. Virginia, published in the work of General J. G. Barnard on the *Defenses of Washington*, 1871.

From the former the names of many roads, streams, estates, &c., have been obtained, while from the latter those of forts, batteries, &c., are often employed as more convenient. In this respect, however, much remains to be desired. While the military map is much antiquated, the other is frequently both defective in omitting what is required, and incorrect in erroneously locating streams and other objects well known to the writer. In his extensive rambles he has learned many local names not found on the maps, and in a few cases of special botanical interest where names are wholly wanting he has long been in the habit of designating the localities by names of his own christening, and for which he offers no apology.

The following are a few of the principal places of botanical interest which will be found to recur most frequently in the notes, and for this reason brief descriptions of them are appended.

#### 1. *The Rock Creek Region.*

Rock Creek, which forms the boundary line between Washington and Georgetown (West Washington), has escaped to a remarkable degree the inroads of agriculture and population. For the greater part of its length within the District of Columbia, its banks are still finely wooded for some distance back and afford a rich and varied field for botanical exploration. The character of the surface along Rock Creek is most beautiful and picturesque, often rocky and hilly, with frequent deep ravines coming down into the usually narrow bottom through which it flows. The stream itself is full of the most charming curves, and the whole region is an ideal park. No one can see it without thinking how admirably it is adapted for a National Park. Such a park might be made to extend from Oak Hill Cemetery to the Military Road opposite Brightwood, having a width of a mile or a mile and a half. Not only every botanist, but every lover of art and nature must sigh at the prospect, now not far distant, of beholding this region devastated by the ax and the plow. The citizens of Washington should speedily unite and strenuously urge upon Congress the importance of early rescuing this ready-made National Park from such an unfortunate fate.\*

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\* It is remarkable that when committees of Congress have been appointed, as they several times have been, to consider a site for a National Park, they have usually looked in other directions and seemed to ignore the existence of this region, which is certainly the only one that possesses any natural claims. A mere carriage-ride through

The Rock Creek region is divided, as far as the designation of localities is concerned, into six sections. The first, embracing the series of groves from Georgetown to Woodley Park, on the right bank of the creek, is called Woodley. This section embraces several interesting ravines, and in it are found many plants rare elsewhere, such as *Chamaelirium Carolinianum*, *Cypripedium pubescens*, *Hesperis matronalis*, and *Liparis Læselii*. In it is also a grove of the Hercules' Club (*Aralia spinosa*). On the left bank of the creek lie the Kalorama Heights and some fine open woodland. The Woodley Park section extends to the ravine which comes down opposite the old brick mill ruin, known as the Adams Mill. The timber here has been thinned out recently by the proprietors, but not cleared off, and the vegetation has undergone a marked change. Several interesting plants have been found in Woodley Park, including the rare *Obolaria Virginica* and the beautiful *Spiraea Aruncus*. Above this the timber is heaviest on the left bank, and some very fine ravines occur, at the head of one of which is a magnolia and sphagnum swamp where *Veratrum viride* and *Symplocarpus fatidus* keep company with *Gonolobus obliquus* and *Pirus arbutifolia*. Here, too, though well up towards the Ford, has been found *Polemonium reptans*, not seen elsewhere.

This third section terminates at Piney Branch, and from here to Pierce's mill, and as far above as the mouth of Broad Branch, the fourth section extends. This section is well wooded on both sides, and includes the enchanting Cascade Run, which leaps down over the most romantic rocks.

Near Pierce's mill are many trees and shrubs, planted there years before, but now well naturalized. Among these are *Aralia spinosa*, *Xanthoxylum Americanum*, *Acer saccharinum*, *Pinus Strobus*, and *Carya alba*. Below the mill, on the creek bottom, is a long-abandoned nursery of *Populus alba* and *Acer dasycarpum*.

From Broad Branch to the Military Road is the fifth and perhaps most interesting section of the Rock Creek Region. On the left bank lie the once noted Crystal Springs, and though the buildings are removed, the springs remain unchanged. Here have been found *Ophioglossum vulgatum*, *Anychia dichotoma*, and *Perilla ocimoides*, as well as *Tipularia discolor*. On the right bank, and above Blagden's Mill, is a bold bluff in a short bend of the creek, forming a sort of promontory, upon which

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such parts as are traversed by roads is wholly insufficient to afford an adequate idea of its merits from this point of view. For the greater part of the distance mentioned above, this region is accessible only to footmen.



was *Gaultheria procumbens*, the wintergreen or checkerberry, its only known locality within our limits. Half a mile further back upon the wooded slope, is the spot on which stand a dozen fine trees of the Table Mountain pine (*P. pungens*). Here also found *Pycnanthemum Torreyi*.

There must be added a sixth section, extending from the old Road to the north corner of the District of Columbia, which follows Rock Creek. For the first mile there is little of interest, the land approaching the creek, and the low hills near its banks covered with a short second growth of scrub pine and blackjack. On the Claggett estate, on the right bank, and to some extent besides, lies the largest forest within our limits. This wood belongs, to the Carroll estate, and is so designated in this catalogue. It has been found very many most interesting plants. It was an extensive tract found for the crowfoot (*Lycopodium complanatum*). It still constitutes the most reliable and abundant source known in the District. Its present fame, however, rests upon its hybrid oaks, of which the most interesting forms have been found there. (See *Field Notes*, October and November, 1875, p. 39. *Botanical Gazette*, 1880, p. 123.) Here also grow quite abundantly *Pyrola elliptica* and *Microstylis ophioglossoides*. It is also a locality for many other species rare elsewhere.

## 2. The Upper Potomac Region.

That of the left bank of the Potomac is in many respects very different from any other locality within our limits. A mile above the city, and commencing from the recently constructed Outlet to the Chesapeake and Ohio Canal, there exists a broad and low country, formerly known by the name of Carberry Meadows, lying between the canal and the river, and extending to the feeder of the distance of about three and a half miles. This interval is marked by two convenient landmarks, viz., one mile above the Outlet is a distillery and guano factory, popularly known as Eads' Mill, and the further the celebrated Chain Bridge. Little Falls proper extends a hundred yards above the bridge and extend half a mile or more. The region above the bridge will therefore be designated as Little Falls.

The flats terminate in a remarkable knoll or small hillock of a peculiar outline and abrupt sides, which, from the combined effect of the river on one side and large overflows from it below, becomes

practically an island, and is well known to all as High Island. These river flats are in most places covered with large boulders of the characteristic gneiss rock of the country. In some parts the surface is very rough, and numerous pools or small ponds of water occur. Overflows and leakages from the canal cause large sloughs and quagmires, while annual ice-gorges crush down the aspiring fruticose vegetation. All these circumstances lend variety to the locality, and, as might be expected, the flora partakes largely of this characteristic. It would prolong this sketch unduly to enumerate all the rare and interesting plants which this region has contributed to our vegetable treasures, but conspicuous among them are *Polygonum amphibium*, var. *terrestre*, *Isanthus cœruleus*, *Herpestis nigrescens*, *Brasenia peltata*, *Cyperus virens*, and *Nesaea verticillata*, all of which occur below Eads' Mill; *Ammannia humilis*, a remarkable variety of *Salix nigra* (*S. nigra*, var. *Wardii*, Bebb. q. v. *infra*), *Salix cordata*, and *S. longifolia*, as also *Spiranthes latifolia* and *Samolus Valerandi*, var. *Americanus*, which may be found between this point and the bridge; while at the Little Falls we are favored with *Paronychia dichotoma*, *Oenothera fruticosa*, var. *linearis* (very distinct from the type), and *Ceanothus ovatus*, also *Ranunculus pusillus* and *Utricularia gibba*. But rich and varied as are these lower flats, they are excelled by High Island, the flora of which is by far the most exuberant of all within the knowledge of botanists. Here we find *Jeffersonia diphylla*, *Caulophyllum thalictroides*, *Erigenia bulbosa*, *Silene nivea*, *Valeriana paniciflora*, *Erythronium albidum*, *Iris cristata*, and great numbers of others of our most highly-prized plants, many of which are found here only.

Above the feeder is a series of islands in the river, lying for the most part near the Maryland shore, and to which the maps, so far as I can learn, assign no names. The first of these lies well out in the river, and has been made to form a part of the feeder-dam. It is low and frequently overflowed, and has not as yet furnished many rare plants, though here *Arabis dentata* and some others have been found. It has been designated Feeder-dam Island. The second is half or three quarters of a mile above, lies higher, and is covered with a very dense and luxuriant herbaceous vegetation and fine trees, chiefly of box-elder (*Negundo aceroides*), from which circumstance and the peculiar impression which the long, gracefully-pendant, staminate flowers of these trees produced on the occasion of its first discovery by a botanical party, it received the name of Box-Elder Island. The third island is a short

Distance above the last, has a more elevated central portion, and a similar vegetation. Here was found on our first visit, and also on subsequent ones, *Delphinium tricornis*, and for this contribution to the Flora of the Columbia it was christened Larkspur Island. The fourth of these islands is in many respects similar to the two last described, and upon it stands the only indigenous specimen of *Acer saccharinum* (q. v. *infra*) yet found here. It has therefore been appropriately named Sugar-Maple Island. *Erythronium albidum*, *Trillium sessile*, *Jeffersonia diphylla*, and similar species abound on all these islands, while on the Larkspur Island, besides the *Delphinium*, has also been found *Phacelia Purshii*. The beauty of these natural flower-gardens in the months of April and May is unequalled in my experience. The light and rich alluvial soil causes the vegetation to shoot up with magic rapidity at the first genial rays of the vernal sun, and often the Harbinger of Spring (*Erigeron bulbosa*), true to its name, will greet the delighted Rambler in late February or early March.

The opposite or Virginia side of the Upper Potomac consists entirely of bold bluffs, interrupted by deep ravines, often containing wild torrents and dashing cascades. Here the flora, though less rich and varied, is also characteristic and interesting, and embraces among other rare things *Rhododendron maximum*, *Iris cristata*, *Scutellaria saxatilis*, *Pycnanthemum Torreyi*, *Solidago rupestris*, and *S. Virga-aurea*, var. *humilis*.

On the Maryland side, and a mile above the uppermost point thus far mentioned is the Cabin John Run, which the botanist celebrates more for its Walking Fern (*Camptosorus rhizophyllus*) than for the world-renowned arch that spans it.

The next most prolific source of interesting plants is the region of the Great Falls. The collecting grounds begin a mile or more below, at Broad Water. On both sides of the canal the country is excellent, rocky and wooded, with stagnant pools and sandy hillocks. On these rocks grows *Sedum telephoides*, and near Sandy Landing are found *Vitis vulpina* (q. v.), *Arabis patens*, *A. hirsuta*, and *Triosteum angustifolium*. In the pools have been found *Carex decomposita*, *Potamogeton hybridus*, and *P. paniculatus*, while on a rocky headland a large "water-pocket" has yielded us our only specimen of the white water-lily (*Nymphaea odorata*). *Oratogon parvifolia*, *Rumex verticillatus*, *Steironema lanceolatum*, and last, but not least, *Nasturtium lacustre*, have also rewarded my researches in this singular and rather weird region.

On the opposite side of the river the site of the ancient canal around the falls has proved very fertile in botanical trophies. *Polygala ambigua* is found near the boat-landing, while by climbing the cliffs below this point the native of more northern climes may gaze once more upon his familiar hemlock spruce (*Tsuga Canadensis*). Difficult Run, a mile farther down, though indeed difficult of approach, repays the effort with *Podostemon ceratophyllus*, *Smilacina stellata*, *Potamogeton Claytonii*, and numerous other herbal treasures.

### 3. The Lower Potomac Region.

Passing next to the Lower Potomac, the localities of special interest are : 1. Custis Spring, opposite the Arlington estate, with the extensive marsh below, where *Sagittaria pusilla*, *Discopleura capillacea*, *Cyperus erythrorhizos*, and other rare species are alone known to grow. 2. The point and bay below Jackson City, known as Roach's Run, where are found, among other good things, *Scrophularia nodosa*, *Tripsacum dactyloides*, and *Pycnanthemum lanceolatum*. 3. Four Mile Run, half way to Alexandria, not yet sufficiently explored, including the vicinity of Fort Scott, to the northwest, where *Clematis ochroleuca* and *Asclepias quadrifolia* may be collected ; and, 4. Hunting Creek, a large estuary below Alexandria, including Cameron Run, the stream which debouches into it with its tributaries, Back Lick Run and Holmes Run, which unite to form it. Here have been found at various points *Clematis ochroleuca*, *Gonolobus hirsutus*, *Itea Virginica*, *Geranium columbinum*, *Micranthemum Nuttallii*, *Habenaria virescens*, *Quercus macrocarpa*, *Carex gracillima*, *Geum strictum*, *Galium asprellum*, and very many other rare plants.

On the left bank of the Lower Potomac the chief locality of interest is a large wooded area below the Government Hospital for the Insane. This has proved a rich hunting ground for the botanist, and has yielded *Carex pallescens*, *C. tetanica*, var. *Woodii*, *Gonolobus hirsutus*, *Silene Armeria*, *Parietaria Pennsylvanica*, *Myosotis arvensis*, *Scutellaria nervosa*, &c. *Asplenium angustifolium* is known only at Marshall Hall, where it has been collected by Mr. O. M. Bryan, while opposite Fort Foote Mr. Zumbrock has found *Myriophyllum spicatum*, and opposite Alexandria Professor J. H. Comstock and Miss H. B. Willets have discovered *Plantago cordata*.

### 4. The Terra Cotta Region.

This embraces some low grounds and undulating barrens near the terra cotta works at Terra Cotta Station, on the Metropolitan Branch of the Baltimore and Ohio Railroad, three miles from the city, and also

a small swamp a quarter of a mile beyond and to the eastward. Here on the dry ground have been found *Onosmodium Virginianum*, *Clitoria Mariana*, and *Habenaria lacera*, while in the swamp occur *Aster æstivus*, *Solidago stricta*, *Woodwardia Virginica*, *Asclepias rubra*, *Poterium Canadense*, and numerous other plants rare or absent in other localities.

#### 5. The Reform School Region.

This locality is very limited in extent but has proved one of the most fertile in botanical rarities. Its nucleus consists of a little swampy spot a short distance to the south of the National Reform School, in which is located a beautiful spring; but the woody tract of country surrounding this and stretching southward and eastward some distance has also proved very fruitful. In the different portions of this region have been discovered *Phlox maculata*, *Melanthium Virginicum*, *Bartonia tenella*, *Lespedeza Stuevei*, *Desmodium Marylandicum* and *D. ciliare*, *Buchnera Americana*, *Fimbristylis capillaris*, *Quercus prinoides*, *Carex bullata*, *Habenaria ciliaris*, and *Gentiana ochroleuca*, most of which do not occur at all elsewhere.

#### 6. The Holmead Swamp Region.

Like the last, this locality is quite circumscribed in area, but like it, too, it is rich in interesting plants. It occupies a ravine leading to Piney Branch from the east, at the point where the continuation of Fourteenth street crosses that stream. The road connecting the last named with the Rock Creek Church road, and which is called Spring Street, follows this valley. The collecting-grounds are on the south side of this road and in the springy meadow along the rill. The timber has long been cut off but the boggy character of the ground has thus far protected it from cultivation. The pasturing of animals on it during a portion of the year has latterly become a serious detriment to the growth of plants. Mr. Holmead, who owns it and lives near by, has kindly permitted botanists to investigate it for their purposes. Here have been found *Ludwigia hirsuta*, *Drosera rotundifolia*, *Asclepias rubra*, *Xyris flexuosa*, *Fuirena squarrosa*, *Rhynchospora alba*, *Coreopsis discoidea*, and the beautiful *Oalopogon pulchellus*, the most showy of our orchids.

In addition to these specially fertile tracts, there are many other localities of great interest where valuable accessions to our flora have been made, and which will be particularly designated under the names of these species. It will suffice here to mention a wet meadow between the National Driving Park and Bladensburg, where, in a very diminu-

live spot *Sarracenia purpurea*, *Viola lanceolata*, and *Carex bullata*, the two first wholly unknown elsewhere, have been discovered; a marsh a mile above Bladensburg, near the mill-race, where only the majestic *Stenanthium robustum* has been seen; a little swamp near the Sligo Creek, between the Riggs and Blair roads, where the Hartford Fern (*Lygodium palmatum*) grows sparingly; and another, between Bladensburg and the Maryland Agricultural College, where *Solidago elliptica*, *Ascyrum stans*, and *Lycopodium complanatum*, var. *Sabinæfolium*, have been found. The Eastern Branch region is not specially rich in floral treasures, but on its banks and marshes some good things appear. *Steironema lanceolatum*, *Eleocharis quadrangulata*, *Scirpus fluviatilis* and *S. sylvaticus*, *Ranunculus ambigens*, and *Salix Russelliana* are among these, though some of them are also found elsewhere.

#### V. FLOWERING TIME OF PLANTS.

It has already been remarked that most species flower at Washington much earlier than at points farther north or than the dates given in the manuals. In consequence of this, a botanist unacquainted with this fact and accustomed to those climates, and to relying upon the books, would be likely to be behind the season throughout the year and fail to get the greater part of the plants he desired. With all my efforts to make allowance for this fact, I have frequently been sorely disappointed, and was at last driven to making a careful record, preserving and correcting it from year to year, of the flowering time of plants in this locality. The notes on this subject appended to nearly every species enumerated in the list embody the general results of these observations, and may in the main be relied upon. The expressions used are not loose conjectures, but are in the nature of compilations from recorded data. In most cases an allowance of two weeks may be made for the difference in seasons, though rarely more and often less. Certain plants, as, for example, *Tipularia discolor*, flower at almost exactly the same time every year. Occasionally, however, one will vary a month or more in a quite unaccountable way. But any one who has watched the periodical changes of the general vegetation for a series of years and recorded his observations will more and more realize the exactness even of these complex biological phenomena, which depend so absolutely upon uniform astronomical events.

From this point of view the season which presents the greatest variation, and also for this and other reasons the greatest interest, is the

spring. There are a few plants which may sometimes be found in flower here in January, such as *Stellaria media*, *Taraxacum Dens-leonis*, or *Acer dasycarpum* (collected January 17, 1876, in the city), in favored places; but these will bloom at any time when a few days of mild weather with sunshine can come to revive them. There are, however, several strictly vernal species, which bloom quite regularly in the latter part of February, such as *Symplocarpus fetidus*, *Chrysosplenium Americanum*, and often *Anemone Hepatica*. The number regularly found in flower in March is quite large, and in special years very large. It was, of course, impossible to make observations every day of any year, but taking a number of years, my observations cover nearly every day of the spring season. As showing the number of these early vernal species, and also how widely the seasons may differ, the following facts are presented:

In the year 1878, 17 species had actually been seen in flower and noted up to March 24. I did not go out again that year until April 7, when I enumerated 46 additional species, making 63 in all up to that date. This was an exceptionally early season. The next spring—that of 1879—was a backward one, as is shown by the fact that, while I had visited the same localities and taken notes with equal care, only 33 species had been seen in flower up to April 13. Twenty-nine species which had been seen in flower on April 7, 1878, were not yet in flower in the same localities on April 13, 1879. There appeared to be about three weeks' difference in these two seasons. The last season—1880—was again an early one, though less so than 1878. It was, however, near enough to the average to render the facts observed of great value. The following are a few of them:

On February 20, seven species were seen in flower in the Rock Creek Region. On April 4, thirty were enumerated on the Virginia side of the Potomac, above the Aqueduct Bridge. On April 11, eleven were seen in addition to those previously enumerated in the Eastern Branch region; and on the 18th of April, High Island was visited and twenty-nine added to all previously recorded, three of which were then in fruit. The total to this date was, therefore, seventy species. This season I concluded was a week or ten days later than that of 1878, and as much earlier than that of 1879.\*

We may now inquire what some of these early plants are.

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\* Since the above was written, the present season (1881) has passed its vernal period. It has proved still more backward than 1879 and the latest spring thus far observed. On April 3 I made my first excursion and visited the Virginia side of the Potomac above Rosalyn. Only 7 species were seen in flower, including *Alnus serrulata*, which doubtless can be obtained much earlier in ordinary years, but has been overlooked.

The following have been observed in flower in February:

<i>Chrysosplenium Americanum</i> . . . . .	February 17, 1878
<i>Anemone Hepatica</i> . . . . .	February 20, 1876
<i>Salix Babylonica</i> . . . . .	February 22, 1874
<i>Populus alba</i> . . . . .	February 22, 1874
<i>Draba verna</i> . . . . .	February 24, 1878
<i>Acer dasycarpum</i> . . . . .	February 24, 1878
<i>Stellaria media</i> . . . . .	February 29, 1880
<i>Cerastium viscosum</i> . . . . .	February 29, 1880
<i>Claytonia Virginica</i> . . . . .	February 29, 1880
<i>Acer rubrum</i> . . . . .	February 29, 1880
<i>Symplocarpus foetidus</i> . . . . .	February 29, 1880

To these should, perhaps, be added, *Equisetum hyemale*, which was found February 17, 1878, near the Receiving Reservoir, with the spikes well advanced, quite contrary to the books which make it fruit in summer.

In addition to the above, which may often also be seen later, the following have been noted flowering in March:

<i>Populus alba</i> . . . . .	March 3, 1874
<i>Viola pedata</i> . . . . .	March 5, 1876
<i>Houstonia cærulea</i> . . . . .	March 5, 1876
<i>Obolaria Virginica</i> . . . . .	March 5, 1876
<i>Dentaria heterophylla</i> . . . . .	March 8, 1874
<i>Poa brevifolia</i> . . . . .	March 8, 1874
<i>Capsella Bursa-pastoris</i> . . . . .	March 10, 1878
<i>Lamium amplexicaule</i> . . . . .	March 10, 1878
<i>Lindera Benzoin</i> . . . . .	March 10, 1878
<i>Epigæa repens</i> . . . . .	March 15, 1874
<i>Ulmus fulva</i> . . . . .	March 15, 1874
<i>Luzula campestris</i> . . . . .	March 15, 1874
<i>Saxifraga Virginensis</i> . . . . .	March 16, 1879
<i>Sanguinaria Canadensis</i> . . . . .	March 17, 1878
<i>Sisymbrium Thaliana</i> . . . . .	March 17, 1878

Besides *Draba verna*, a January species, and *Anemone Hepatica*, a February one, the only herbaceous flower found was *Sanguinaria Canadensis*. On April 10 High Island was visited, but only 8 species could be added to the above 7, and several of these, as *Jeffersonia diphylla*, *Dicentra Cucullaria*, *Saxifraga Virginensis*, *Erythronium Americanum*, and *Stellaria pubera*, were very sparingly out. Cold weather continued to the end of the third week in April, and on April 24, when High Island was again visited and a thorough canvass made, only 22 additional plants could be found there, and the whole number seen to that date was 46. The conclusion was that up to that time the season was about three weeks later than that of 1880.



<i>Salix tristis</i> .....	March 17, 1877
<i>Populus grandidentata</i> .....	March 21, 1880
<i>Corydalis flavula</i> .....	March 22, 1874
<i>Thalictrum anemonoides</i> .....	March 24, 1878
<i>Dentaria laciniata</i> .....	March 24, 1878
<i>Antennaria plantaginifolia</i> .....	March 24, 1878
<i>Erodium cicutarium</i> .....	March 27, 1874
<i>Erigenia bulbosa</i> .....	March 28, 1875
<i>Cardamine hirsuta</i> .....	March 30, 1879

It is about the 1st of April, especially in early years, that the vegetation seems to receive its greatest impetus. This is well shown by the following list of species seen in flower during the first week in April:

<i>Ulmus Americana</i> .....	April 1, 1873
<i>Jeffersonia diphylla</i> .....	April 2, 1876
<i>Cardamine rhomboidea</i> .....	April 2, 1876
<i>Stellaria pubera</i> .....	April 2, 1876
<i>Thaspium aureum</i> .....	April 2, 1876
<i>Euphorbia commutata</i> .....	April 2, 1876
<i>Alnus serrulata</i> .....	April 3, 1881
<i>Ranunculus abortivus</i> .....	April 4, 1880
<i>Dicentra Cucullaria</i> .....	April 4, 1880
<i>Arabis lævigata</i> .....	April 4, 1880
<i>Viola tricolor</i> , var. <i>arvensis</i> .....	April 4, 1880
<i>Vicia Caroliniana</i> .....	April 4, 1880
<i>Amelanchier Canadensis</i> .....	April 4, 1880
<i>Nepeta Glechoma</i> .....	April 4, 1880
<i>Sassafras officinale</i> .....	April 4, 1880
<i>Carpinus Americana</i> .....	April 4, 1880
<i>Ostrya Virginica</i> .....	April 4, 1880
<i>Erythronium Americanum</i> .....	April 4, 1880
<i>Barbarea vulgaris</i> .....	April 5, 1874
<i>Pedicularis Canadensis</i> .....	April 5, 1874
<i>Mertensia Virginica</i> .....	April 5, 1874
<i>Ranunculus abortivus</i> , var. <i>micranthus</i> .....	April 7, 1878
<i>Ranunculus repens</i> .....	April 7, 1878
<i>Asimina triloba</i> .....	April 7, 1878
<i>Caulophyllum thalictroides</i> .....	April 7, 1878
<i>Arabis dentata</i> .....	April 7, 1878
<i>Barbarea præcox</i> .....	April 7, 1874

<i>Sisymbrium Alliaria</i> .....	April 7, 1878
<i>Viola cucullata</i> .....	April 7, 1878
<i>Viola striata</i> .....	April 7, 1878
<i>Viola glabella</i> .....	April 7, 1878
<i>Ionidium concolor</i> .....	April 7, 1878
<i>Silene Pennsylvanica</i> .....	April 7, 1878
<i>Cerastium vulgatum</i> .....	April 7, 1878
<i>Cerastium oblongifolium</i> .....	April 7, 1878
<i>Geranium maculatum</i> .....	April 7, 1878
<i>Oxalis corniculata</i> var. <i>stricta</i> .....	April 7, 1878
<i>Cercis Canadensis</i> .....	April 7, 1878
<i>Potentilla Canadensis</i> .....	April 7, 1878
<i>Thaspium trifoliatum</i> .....	April 7, 1878
<i>Cornus florida</i> .....	April 7, 1878
<i>Chrysogonum Virginianum</i> .....	April 7, 1878
<i>Senecio aureus</i> .....	April 7, 1878
<i>Fraxinus viridis</i> .....	April 7, 1878
<i>Phlox divaricata</i> .....	April 7, 1878
<i>Lithospermum arvense</i> .....	April 7, 1878
<i>Betula nigra</i> .....	April 7, 1878
<i>Populus monilifera</i> .....	April 7, 1878
<i>Arisæma triphyllum</i> .....	April 7, 1878
<i>Erythronium albidum</i> .....	April 7, 1878
<i>Trillium sessile</i> .....	April 7, 1878

My special observations on the vernal flowering time of plants extend about two weeks later, or to the end of the third week in April, after which the great number of plants in bloom, including the amentaceous trees, render it difficult to pursue the investigation, while at the same time the facts become less valuable. The results for the second and third weeks of April, always excluding all previously enumerated, are as follows:

<i>Arabis lyrata</i> .....	April 9, 1876
<i>Fraxinus pubescens</i> .....	April 11, 1880
<i>Salix cordata</i> .....	April 11, 1880
<i>Salix purpurea</i> .....	April 11, 1880
<i>Vaccinium corymbosum</i> .....	April 12, 1874
<i>Carex platyphylla</i> .....	April 12, 1874
<i>Poa annua</i> .....	April 12, 1874
<i>Thalictrum dioicum</i> .....	April 14, 1876

<i>Rhus aromatica</i> .....	April 14, 1878
<i>Phlox subulata</i> .....	April 14, 1878
<i>Arabis patens</i> .....	April 18, 1880
<i>Cardamine hirsuta</i> , var. <i>sylvatica</i> .....	April 18, 1880
<i>Negundo aceroides</i> .....	April 18, 1880
<i>Erigeron bellidifolius</i> .....	April 18, 1880
<i>Krigia Virginica</i> .....	April 18, 1880
<i>Sisyrinchium anceps</i> .....	April 18, 1880
<i>Carex laxiflora</i> .....	April 18, 1880
<i>Carex Emmonsii</i> .....	April 18, 1880
<i>Melica mutica</i> .....	April 18, 1880
<i>Anemone nemorosa</i> .....	April 19, 1874
<i>Viola cucullata</i> , var. <i>cordata</i> .....	April 19, 1874
<i>Dirca palustris</i> .....	April 19, 1874
<i>Carex Pennsylvanica</i> ... .	April 19, 1874
<i>Lathyrus venosus</i> .....	April 21, 1878
<i>Ribes rotundifolium</i> .....	April 21, 1878
<i>Salix nigra</i> , var. <i>Wardi</i> .....	April 21, 1878

We thus see that a single collector has, in the course of eight years' operations, actually observed and noted 11 species in bloom in February, 24 more in March, 51 additional in the first week of April, and 26 others during the second and third weeks of April, or 112 up to April 21.

It should be remarked that there is no doubt that if the same localities in which the large number were observed on April 2, 1876, April 4, 1880, and April 7, 1878, had been visited in the last days of March of those years, quite a number of these plants would have been found sufficiently advanced to demand a place in the lists, and thus the month of March would have been credited with so many here set down for the first week in April. Probably, all things considered, not less than 50 species in certain favored seasons either reach or pass by their flowering time by the end of March.

In arranging the above lists the order of dates has, of course, taken precedence, but where several are enumerated under one date the natural order is followed.

It is scarcely necessary to suggest a caution to collectors against relying upon these dates in making collections. They represent the earliest observations and not the average. In most cases an allowance of at least one week should be made for the full blooming of all the individuals of any given species. In all cases, however, one or more individuals

were actually seen in flower and sufficiently advanced for collection; otherwise no note was taken. The *Carices* of course had not advanced to developed *perigynia*, and many plants whose inflorescence is centrifugal or centripetal, or which develop fruit while retaining flowers, should be looked for at a later stage.

#### VI. AUTUMNAL FLOWERING.

One of the most interesting peculiarities of the flora of this vicinity is that of the second blooming of vernal species, which in most cases takes place quite late in the fall (See *Field and Forest*, April-June, 1878, Vol. III, p. 172). In addition to the seven species observed and published in 1878, I have noted more than as many others manifesting this habit, and it is probable that still others will yet be added. The following is a list of those thus far recorded, with the dates at which observed, and which may be compared with those of their regular vernal period :

<i>Ranunculus abortivus</i> , var. <i>micranthus</i> .....	November 28, 1875
<i>Cardamine hirsuta</i> .....	October 3, 1880
<i>Viola pedata</i> , var. <i>bicolor</i> .....	Sept. 22 and Dec. 8, 1878.
<i>Viola striata</i> .....	September 10, 1876
<i>Fragaria Virginiana</i> .....	September 22, 1878
<i>Rubus villosus</i> .....	Sept. 22 and Oct. 27, 1878
<i>Lonicera Japonica</i> .....	October 13, 1878
<i>Houstonia purpurea</i> .....	October 13, 1878
<i>Houstonia purpurea</i> , var. <i>angustifolia</i> .....	September 12, 1880
<i>Houstonia cærulea</i> .....	September 7, 1879
<i>Vaccinium stamineum</i> .....	October 13, 1878
<i>Rhododendron nudiflorum</i> .....	October 13, 1878
<i>Phlox divaricata</i> .....	October 16, 1873
<i>Sabbatia angularis</i> .....	October 27, 1878
<i>Echium vulgare</i> .....	October 8, 1880
<i>Veronica officinalis</i> .....	October 8, 1873
<i>Agrostis scabra</i> .....	November 12, 1876

To this list of seventeen should perhaps be added *Stellaria pubera*, which, instead of a vernal and an autumnal period, has two vernal periods, as described under that species in the systematic notes. *Saks longifolia* has this year flowered twice, once in April and again in June.\*

\* Mr. M. S. Bebb, under date of June 22, 1881, replying to my inquiry in regard to this phenomenon, says: "The second blooming of *S. longifolia* is not anomalous; but,

Autumnal blooming, in so far as it is peculiar to this climate, may be chiefly attributed to the tolerably regular occurrence here of a hot and dry season in midsummer. This usually begins towards the end of June and ends about the middle of August. During this period in some seasons the ground and vegetation become parched and dried up so that vegetal processes in many plants cease almost as completely as in the opposite season of cold. From this dormant state the warm and often copious rains of the latter part of August revive them as do the showers of spring, and they begin anew their regular course of changes. The frosts of October usually cut their career short before maturity is reached, but in some cases two crops of seed are produced. In addition to this, there frequently also occurs a very warm term in November, often extending far into December, and of this certain species take advantage and push forth their buds and flowers.

VII. ALBINOS.

Well-defined albinos have been collected of the following species:

Desmodium nudiflorum.	Mertensia Virginica.
Liatris graminifolia.	Sabbatia angularis.
Rhododendron nudiflorum.	Pontederia cordata.
Vinca minor.	

The green-flowered variety of *Trillium sessile* and of *Gonolobus obliquus* are also found. On June 16 of this year I collected *Carex tentaculata* on the Eastern Branch marsh, having the spikes completely white, as if etiolated, but not yet mature, and apparently perfectly healthy and vigorous; indeed the plants were considerably taller than normally green ones growing with them, but they were always either entirely whitened or not at all so. On examination and comparison no other differences could be detected.

VIII. DOUBLE FLOWERS, ETC.

*Thalictrum anemonoides*, *Ranunculus bulbosus*, *Claytonia Virginica*, and *Rubus Canadensis* have been found with the flowers much doubled, as in cultivation.

*Hydrangea arborescens* occasionally has the outer circle of petals expanded, as in cultivation.

*Rudbeckia fulgida* has been found with all its rays tubular but of the usual length.

On the contrary, this species continues to bloom from May to September, wherever found, from New England to Calif, and yet the fact has not received mention in the book. He further states, however, that he has called attention to it some years ago in the "Lena." [Since appending this note I have revisited the locality (July 17, 1861,) and find it still blooming with fresh flowers.]

Bull. Nat. Mus. No. 22—}

IX. STATISTICAL VIEW OF THE FLORA.

In order to present a clear view of the general character of the vegetation of the District of Columbia and the adjacent country, I have made a somewhat careful analysis of the larger groups and families, and comparison of them not only with each other but with the same groups and families in larger areas and other local floras. The general results are presented below.

It is important to remark that in all enumerations it is not simply the number of *species* as at present recognized, but the number of *different plants* (species and varieties) that is employed. The reason for doing this is, that in very many cases well-marked varieties are eventually made species, and if two plants really differ there is little probability that they will ever be merged into one species without that difference being indicated by some difference of name. The aim has therefore been to take account of the number of plants without regard to the manner in which they are named.

The whole number of vascular plants now known to this flora, as catalogued in the list appended to this paper, is 1,249, and these belong to 527 different genera, or about 2½ species to each genus. These are distributed among the several systematic groups as follows:

Series, Classes, and Divisions.	Genera.	Species and varieties.
Polypetalæ .....	174	356
Gamopetalæ .....	160	230
Total Dichlamydæ .....	343	745
Monochlamydæ (Apetalæ) .....	47	124
Total Dicotyledons .....	390	869
Monocotyledons .....	112	231
Gymnospermæ (Coniferæ) .....	4	7
Total Phanogamia .....	506	1,297
Cryptogamia .....	21	42
Total Vascular Plants .....	527	1,249
The percentages of the total are as follows:		
Polypetalæ .....	33	29
Gamopetalæ .....	32	31
Total Dichlamydæ .....	65	60
Monochlamydæ (Apetalæ) .....	9	10
Total Dicotyledons .....	74	79
Monocotyledons .....	21	28
Gymnospermæ (Coniferæ) .....	1	1
Total Phanogamia .....	96	97
Cryptogamia .....	4	3

Large orders.

argest orders, arranged according to the number of species,  
78:

Orders.	Genera.	Species and varieties.
.....	53	149
.....	43	110
.....	10	108
.....	24	57
.....	15	46
.....	23	42
.....	16	33
.....	15	32
.....	10	30
.....	7	27
.....	11	26
.....	7	26
.....	12	24
.....	18	24
.....	3	23
.....	17	22

a number of systematic orders represented in our district is  
h these 16 or 14 per cent. furnish 55 per cent. of the genera  
cent. of the species.

Large genera.

argest genera, arranged according to the number of plants,  
owing:

Genera.	Species and varieties.
.....	70
.....	21
.....	19
.....	18
.....	18
.....	16
.....	14
.....	14
.....	14
.....	13
.....	12
.....	11
.....	11
.....	10
.....	10

or less than 3 per cent. of the genera, furnish 271, or nearly  
of the species.

Introduced Species.

a number of introduced plants enumerated in the subjoined  
193, of which 15 are supposed or known to be indigenous

to other parts of the United States.\* These are distributed through the several larger groups as follows :

Groups.	Old World.	United States.	Total.
Polypetalous .....	65	8	73
Gamopetalous .....	54	3	57
Apetalous (Monochlamydeous) .....	28	2	30
Monocotyledonous (Endogenous) .....	31	1	32
Gymnospermous (Coniferous) .....		1	1
Total .....	178	15	193

It will be seen that the introduced plants amount to 15.5 per cent. of the total flora. The several orders to which these belong are shown in the Summary.

*Shrubby Species.*

Of the 342 "forest trees" enumerated in Sargent's preliminary catalogue of 1880, this flora embraces 85, or 24.8 per cent., of which 65 are large enough to have the dignity of timber trees. Of these 85, 25 are in the Polypetalous Division, but only 12 of this latter number are large; 9 are in the Monopetalous Division, all but 2 of which are large; 44 are in the Apetalous Division, 39 of which are large; and the remaining 7 are Coniferous, all full-sized trees.

The whole number of species which are shrubby or woody above ground is 194, which is 15.5 per cent. of the whole. They are distributed as follows :

Polypetalous .....	83
Gamopetalous .....	36
Apetalous (Monochlamydeous) .....	64
Monocotyledonous (Endogenous) .....	4
Gymnospermous (Coniferous) .....	7
Total .....	194

For further particulars the reader can consult the Summary at the end of the catalogue.

*Comparisons with other Floras.*

While these facts are of great interest in affording a clear conception of the character of our flora, they do not aid us in determining in what respects it is peculiar or marks a departure from those of other portions

\* These are the following:

Xanthoxylum Americanum.	Ribes rotundifolium.	Catalpa bignonioides.
Trifolium repens.	Ribes rubrum.	Maclura aurantiaca.
Prunus Chicasa.	Passiflora incarnata.	Populus grandidentata.
Rosa setigera.	Symphoricarpus racemosus.	Poa annua.
Philadelphus inodorus.	Symphoricarpus vulgaris.	Pinus Strobus.



country, or from that of the country at large. To institute comparisons with other local floras would, of course, carry me much too far from the general purpose of this paper, but it is both more interesting and more practicable to confront a few of the above results with similar ones drawn from a consideration of a large part of the United States. For this purpose, as not only most convenient but as least liable to errors or omissions calculated to vitiate the comparisons, I have chosen that of the United States situated east of the Mississippi River and the most part well covered by *Gray's Manual of Botany* for the eastern portion and *Chapman's Flora of the Southern States* for the southern portion. The plants described in these works are conveniently brought into one series by the second edition of *Mann's Catalogue*, published under the supervision of the authorities at Cambridge in 1872. Since that time changes have since been made in the names, &c., and a few new ones have been added, but these are not sufficient to affect the general conclusions to be drawn from the following comparative tables.

Comparison of Species and Varieties.

The number of species and varieties of vascular plants enumerated in the work above referred to is 4,034, of which the 1,249 of the flora of Washington constitute 31 per cent. The comparison by groups is as follows:

Series, Classes, and Divisions.	Species and varieties in the—		Per cent.
	Eastern United States.	Flora Columbiana.	
.....	1, 115	356	32
.....	1, 314	389	30
.....	2, 429	745	31
.....	349	124	36
.....	2, 778	869	31
.....	1, 034	331	32
.....	28	7	25
.....	3, 840	1, 207	31
.....	194	42	22
.....	4, 034	1, 249	31

Comparison of Genera.

The whole number of genera in the flora of the Eastern United States is 1,249. That of the Flora Columbiana, as already stated, is 527. This constitutes 42 per cent., a much larger proportion than was shown by a comparison of species.

parison of the species. A comparison of the genera by groups gives the following results:

Series, Classes, and Divisions.	Genera represented in the—		Per cent.
	Eastern United States.	Flora Columbia.	
Polypetalæ.....	340	174	51
Gamopetalæ.....	370	169	46
Total Dichlamydeæ.....	719	343	48
Monochlamydeæ (Apetalæ).....	97	47	48
Total Dicotyledons.....	816	390	48
Monocotyledons.....	198	112	57
Gymnospermæ.....	12	4	33
Total Phanogamia.....	1,026	506	49
Cryptogamia.....	39	21	54
Total Vascular Plants.....	1,065	527	49

The percentages here range from 33 in the Gymnosperms to 57 in the Monocotyledons, averaging between 49 and 50, whereas in the similar comparisons for species they ranged from 22 in the Cryptogams to 36 in the *Monochlamydeæ*. This result was to be expected, since as the groups increase the number represented in any local flora should be proportionately larger. For example, 116 orders out of the 156 are represented here, which is upwards of 74 per cent.

#### Comparison of Large Orders.

It will be interesting to compare in a manner similar to the foregoing the number of species in several of the largest orders. For this purpose we may use the same orders mentioned on page 35 as the richest in species of any belonging to this flora. The comparison may then be shown as follows:

Rank.	Orders.	Eastern United States.	Flora Columbia.	Per cent.
1	Compositæ.....	497	169	34
2	Graminæ.....	297	110	37
3	Cyperacæ.....	357	108	30
4	Leguminosæ.....	208	57	27
5	Rosacæ.....	104	46	44
6	Labiata.....	121	42	35
7	Cruciferae.....	76	33	43
8	Scrophulariacæ.....	97	32	33
9	Filices.....	134	30	22
10	Ranunculacæ.....	80	27	34
11	Ericacæ.....	89	26	29
12	Cupuliferae.....	45	24	53
13	Orchidacæ.....	71	24	34
14	Liliacæ.....	82	24	29
15	Polygonacæ.....	56	24	41
16	Umbelliferae.....	63	24	38

This table exhibits better perhaps than any other the special characteristics of the flora. The normal percentage being about 31, we see at in all but five of these sixteen largest orders our flora is in excess of at standard, while it is richest proportionally in the *Cupuliferæ*, *Rosæ*, and *Cruciferæ*, and poorest in the *Filices* and *Leguminosæ*.

*Comparison of large genera.*

In like manner we may compare the 15 large genera given in a preceding table (p. 35):

Genera.	Eastern United States.	Flora Columbiana.	Per cent.
<i>Carex</i> .....	180	70	89
<i>Aster</i> .....	63	21	33
<i>Panicum</i> .....	36	19	53
<i>Solidago</i> .....	61	18	30
<i>Quercus</i> .....	38	18	47
<i>Polygonum</i> .....	27	16	59
<i>Desmodium</i> .....	24	14	58
<i>Salix</i> .....	23	14	61
<i>Juncus</i> .....	38	14	37
<i>Viola</i> .....	24	13	54
<i>Cyperus</i> .....	41	12	29
<i>Ranunculus</i> .....	27	11	41
<i>Eupatorium</i> .....	24	11	46
<i>Helianthus</i> .....	27	10	37
<i>Asclepias</i> .....	22	10	45

This table shows that in all the large genera, except *Solidago* and *Cyperus*, the District of Columbia has more than its full proportion. The genus *Salix* is the one proportionally best represented, while *Polygonum*, *Desmodium*, *Panicum*, and *Viola* each exceed 50 per cent. *Quercus*, *Eupatorium*, and *Asclepias* are also well filled out.

As already remarked, it would carry us too far to undertake the systematic comparison of our flora with those of other special localities, even were the data at hand. Few local catalogues are condensed and summarized for this purpose, and the labor of doing this is very great. The recently published *Flora of Essex County, Massachusetts*, prepared by Mr. John Robinson, however, forms something of an exception to this, and we may directly compare the larger classes and also the orders. The following tables will give an idea of the differences between that flora and our own :

Series, Classes, and Divisions.	Number of orders.		Number of genera.		Number of species and varieties.	
	Essex County.	Flora Columbi-ana.	Essex County.	Flora Columbi-ana.	Essex County.	Flora Columbi-ana.
Polypetales .....	42	45	155	174	200	200
Gamopetales .....	25	27	158	160	200	200
Total Dichlamydeæ .....	67	72	313	343	716	700
Monochlamydeæ .....	18	19	44	47	132	124
Total Dicotyledons .....	85	91	357	390	850	800
Monocotyledons .....	17	20	120	112	202	221
Gymnosperms (Coniferae) .....	1	1	7	4	17	7
Total Phanogamia .....	103	112	484	506	1,269	1,228
Cryptogamia .....	5	4	20	21	65	42
Total Vascular Plants .....	108	116	504	527	1,334	1,270

The 16 large orders enumerated on page 35 may also be compared with profit:

Rank.	Orders.	Number of genera.		Number of species and varieties.	
		Essex County.	Flora Columbi-ana.	Essex County.	Flora Columbi-ana.
1	Compositæ .....	43	53	120	140
2	Gramineæ .....	50	43	120	110
3	Cyperaceæ .....	9	10	120	120
4	Leguminosæ .....	17	24	20	27
5	Rosaceæ .....	12	15	55	45
6	Labiatæ .....	22	23	25	25
7	Cruciferae .....	14	16	20	20
8	Scrophulariaceæ .....	14	15	20	21
9	Filices .....	13	16	40	20
10	Ranunculaceæ .....	9	7	20	27
11	Ericaceæ .....	18	11	37	25
12	Cupuliferae .....	6	7	16	25
13	Orchidaceæ .....	13	12	32	24
14	Liliaceæ .....	18	18	27	24
15	Polygonaceæ .....	3	3	27	22
16	Umbelliferae .....	16	17	20	22

In the flora of Essex County the orders *Umbelliferae* (20) and *Cupuliferae* (16) fall below the lowest of the 16 for the flora of Washington (*Umbelliferae*, 22), while on the other hand the *Caryophyllaceæ* (27), *Salicaceæ* (23), and *Naiadaceæ* (28), not in the list, rise above that number. These orders in the flora of Washington are represented respectively by 19, 19, and 9 species and varieties. With reference to the last named of these orders, however, it may be remarked that the genus *Potamogeton*, which constitutes the greater part of it, has been very imperfectly studied here, and will certainly be largely increased when thoroughly known.

The orders in which this flora falls below that of Essex County are: the *Gramineæ*, *Cyperaceæ*, *Rosaceæ*, *Filices*, *Ranunculaceæ*, *Ericaceæ*, *Liliaceæ*, *Orchidaceæ*, and *Polygonaceæ*, nine in all. In the remaining seven orders there is a greater number of species here than there. It is

noteworthy that our flora exceeds that of Essex County most in the *Compositæ*, *Leguminosæ*, and *Cupuliferæ*, and next to these in the *Scrophulariaceæ*, *Labiataæ*, and *Cruciferaæ*. Our comparatively poorest orders are the *Cyperaceæ*, *Rosaceæ*, *Ericaceæ*, and *Filices*.

Comparing in like manner the 15 large genera enumerated on page 35, we are able to see still more definitely wherein the two floras differ:

Rank.	Genera.	Number of species and varieties.	
		Essex county.	Flor Columbi-ana.
1	<i>Carex</i> .....	71	70
2	<i>Aster</i> .....	25	21
3	<i>Panicum</i> .....	14	19
4	<i>Solidago</i> .....	19	18
5	<i>Quercus</i> .....	10	18
6	<i>Polygonum</i> .....	21	16
7	<i>Desmodium</i> .....	7	14
8	<i>Salix</i> .....	18	14
9	<i>Juncus</i> .....	14	14
10	<i>Viola</i> .....	11	13
11	<i>Cyperus</i> .....	11	12
12	<i>Ranunculus</i> .....	13	11
13	<i>Eupatorium</i> .....	7	11
14	<i>Helianthus</i> .....	5	10
15	<i>Asclepias</i> .....	7	10

The total number of species and varieties represented by these 15 genera is thus considerably larger in the Washington flora (271) than in that of Essex County (253); but whereas they are the absolutely largest genera here, this is not the case there. The genus *Potamogeton* numbers 23 in Mr. Robinson's catalogue, and the genus *Scirpus* 14, while several others probably exceed 10. Those in the above list falling below 10, the lowest on the Washington list, are *Desmodium* (7), *Eupatorium* (7), *Asclepias* (7), and *Helianthus* (5). Those in which the Essex flora exceeds the Washington flora are *Carex*, *Aster*, *Solidago*, *Polygonum*, *Salix*, and *Ranunculus*, though *Carex*, *Solidago*, and *Cyperus* may be regarded as equal in the two floras, and *Juncus* is exactly equal. In *Quercus*, *Desmodium*, *Eupatorium*, *Helianthus*, and *Asclepias*, the Essex flora is poor, only amounting in the second and fourth named to half the number found here.

Relative to the above comparisons in general it may be remarked, first, that the flora of Essex County, Massachusetts, is much more thoroughly and exhaustively elaborated than that of the District of Columbia, lying as it does in the immediate center of botanical activity in this country. This alone is probably sufficient to account for all the difference in the number of species in the two localities, and it will probably be ultimately found that the two floras are very nearly equal. In

the second place, if it should be thought that from its intermediate location between the southern and the northern sections of the country our flora should naturally be the more rich in species, it may be satisfactorily urged on the other hand that while we have only an inland territory, Essex County has both an inland and a maritime territory. Could our range be extended to embrace even a small extent of sea-coast, the number would thereby be very largely increased.

As a final statistical exhibit more comprehensive in its scope, and from a different point of view, I give below a table in which our local flora is compared not only with the floras above named, but with several others in America. As these several floras not only overlap to considerable extent, but also differ widely in the total number of plants embraced by each, it is evident that a numerical comparison would convey a very imperfect idea of the variety in their essential characteristics. It is therefore necessary to reduce them to a common standard of comparison, which has been done by disregarding the actual numbers and employing only the percentage which each group compared bears to the total for each respective flora. The relation of the several groups to the total vegetation of each flora is thus clearly brought out, and a comparison of the percentages of the same group in the different areas displays in the clearest manner possible the relative predominance or scantiness of the group in each flora. Upon this must depend, in so far as botanical statistics can indicate it, the *facies* of each flora—its peculiarities and its characteristics. As in previous comparisons, the table is restricted to Phænogamous and vascular Cryptogamous plants, and the same groups are employed, except that the large genera are omitted, while the number of orders is increased to the 23 largest of this flora, which is taken as the basis of comparison, and they are arranged in the order of rank with reference to it.

The several floras compared, with the total number of plants embraced in each, are as follows:

1. Flora of Washington and vicinity .....	1, 249
2. Flora of Essex County, Mass. ....	1, 324
3. Flora of the State of Illinois .....	1, 542
4. Flora of the Northeastern United States .....	2, 365
5. Flora of the Southeastern United States .....	2, 696
6. Flora of the Eastern United States (= 4 + 5) .....	4, 034
7. Plants collected by the Fortieth Parallel Survey .....	1, 254
8. Plants collected by Lieutenant Wheeler's Survey .....	1, 535

For the flora of Illinois (No. 3), and also for that of the Northern United States east of the Mississippi (No. 4), I have used without veri-

fication the figures of the *Catalogue of the Plants of Illinois*, 1876, prepared by Mr. Harry N. Patterson, as summarized in the preface. In the former case the introduced species are included, but the varieties seem to be excluded. In the latter case, as stated by Mr. Patterson, the introduced species are excluded, as are also, doubtless, the varieties.

For the flora of the Southern United States east of the Mississippi (No. 5), which I have compiled from Dr. Chapman's *Flora of the Southern States*, indigenous species are alone taken, in order to make it conform as nearly as possible to the flora of the Northeastern United States (No. 4).

The plants collected by the Fortieth Parallel Survey (No. 7), and those collected on Lieutenant Wheeler's Survey (No. 8), are introduced rather as a means of contrasting the eastern with the western portions of the continent than as a proper part of the comparative botanical statistics of this vicinity. The former of these collections was very thoroughly and carefully made by an energetic and experienced botanist, Mr. Sereno Watson, and derives its chief value from this fact. It embraces, however, a territory having a somewhat special character from a botanical point of view, viz., in general terms, the Great Basin between the Rocky Mountains and the Sierra Nevadas, and the High Plateaus and mountains immediately adjacent (Wasatch, Uintas, Sierras), with a restricted range north and south. The data are taken from the summary of the work prepared by Mr. Watson, and found on page xlv of the report. The collections embraced in the report of Lieutenant Wheeler's Survey, on the other hand, were made by numerous collectors, some of them amateurs, and were scattered over a very wide extent of Western territory, including Colorado, New Mexico, Utah, Arizona, and Nevada, and continued through five years of exploration. They may be taken, therefore, to represent with some correctness the general character of our Western flora, exclusive of the Pacific coast. The facts given are derived from the "Table of Orders" on page 379. In both cases varieties are excluded.

For the remaining floras compared in the table (Nos. 1, 2, and 6), to avoid recompilation, the data previously used are repeated, species and varieties, including also introduced plants, being employed. As already intimated, however, this difference in the basis of compilation of different floras, applying as it does to the several groups and to the aggregate alike, cannot materially affect the percentages as computed.

The following is the table of percentages :

Series, Classes, and Divisions.		Flora of Wash- ton and vicinity.	Flora of Essex Coun- ty, Massachusetts.	Flora of the State of Illinois.	Flora of the North- eastern United States.	Flora of the South- eastern United States.	Flora of the total Eastern United States.	Plants collected by the Fortieth Par- allel Survey.	Plants collected by Lieutenant Wheel- er's Survey.
Polypetalæ .....		28.5	27.2	28.5	26.8	28.9	27.6	35.1	31.9
Gamopetalæ .....		31.1	27.0	32.2	31.6	34.7	32.6	36.0	35.8
Total Dichlamydeæ .....		59.6	54.2	60.7	58.4	63.6	60.2	71.1	67.7
Monochlamydeæ .....		9.9	10.0	9.8	7.9	8.8	8.7	9.8	10.6
Total Dicotyledons .....		69.5	64.2	70.5	66.3	72.4	68.9	80.9	78.3
Monocotyledons .....		26.5	29.6	25.5	29.0	24.3	25.6	16.4	15.7
Gymnosperms .....		0.6	1.3	0.7	0.9	0.7	0.7	1.2	1.3
Total Phanogamia .....		96.6	95.1	96.7	96.2	97.4	95.2	98.5	95.3
Cryptogamia .....		3.4	4.9	3.3	3.8	2.6	4.8	1.5	4.7
Total Vascular Plants .....		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Rank.	Orders.	Flora of Wash- ton and vicinity.	Flora of Essex Coun- ty, Massachusetts.	Flora of the State of Illinois.	Flora of the North- eastern United States.	Flora of the South- eastern United States.	Flora of the total Eastern United States.	Plants collected by the Fortieth Par- allel Survey.	Plants collected by Lieutenant Wheel- er's Survey.
1	Compositæ .....	11.9	10.3	13.0	12.2	13.7	12.3	16.5	16.6
2	Gramineæ .....	8.9	9.7	7.8	7.5	7.2	7.4	5.4	7.8
3	Cyperaceæ .....	8.6	9.1	8.5	10.5	8.0	8.9	4.4	8.8
4	Leguminosæ .....	4.6	2.9	4.7	4.3	6.1	5.2	7.2	2.2
5	Rosaceæ .....	3.7	4.2	3.2	3.0	2.2	2.6	3.4	2.2
6	Labiataæ .....	3.4	2.6	2.8	2.2	2.8	3.0	0.9	2.2
7	Cruciferaæ .....	2.6	2.2	2.1	2.0	1.4	1.9	4.4	2.2
8	Scrophulariaceæ .....	2.6	2.2	2.7	2.3	2.5	2.4	4.5	2.2
9	Filices .....	2.4	3.0	2.3	2.4	2.1	3.3	1.0	3.3
10	Ranunculaceæ .....	2.2	2.3	2.7	2.3	1.9	2.0	3.0	2.2
11	Ericaceæ .....	2.1	2.8	0.9	2.9	2.0	2.2	1.3	0.9
12	Cupuliferaæ * .....	2.1	1.8	1.4	1.5	1.3	1.4	0.4	0.9
13	Liliaceæ .....	1.9	2.0	2.1	2.4	2.1	2.0	3.0	2.2
14	Orchidaceæ .....	1.9	2.4	1.8	2.4	1.9	1.7	0.6	0.9
15	Polygonaceæ .....	1.8	2.0	1.9	1.1	1.5	1.4	4.0	2.2
16	Umbelliferaæ .....	1.8	1.5	1.8	1.7	1.6	1.6	2.4	1.1
17	Caryophyllaceæ .....	1.5	2.0	1.4	1.5	1.5	1.5	2.2	1.1
18	Salicaceæ .....	1.5	1.7	1.2	0.8	0.3	0.7	0.9	0.8
19	Onagraceæ .....	0.9	1.1	1.2	1.2	1.3	1.1	2.3	2.2
20	Saxifragaceæ .....	0.7	1.0	0.8	1.5	0.9	1.1	2.1	1.4
21	Chenopodiaceæ .....	0.7	1.3	0.7	0.5	0.5	0.6	2.1	1.5
22	Naiadaceæ .....	0.7	2.1	1.2	1.2	0.4	1.0	0.7	0.3
23	Polemoniaceæ .....	0.5	0.1	0.5	0.3	0.5	0.4	3.3	1.5

\* Including the Betulaceæ.

Comparisons have already been made of our local flora with that of Essex County, Massachusetts, which contains so nearly the same number of plants. In examining the percentages in the above table these distinctions are equally manifest. In both divisions of the *Dichlamydeæ*, and also in the total Dicotyledons and the total *Phanogamia*, our flora is richer than that of Essex County, while in the *Monochlamydeæ*, the Monocotyledons, the Gymnosperms, and the Cryptogams it falls below. In the *Compositæ*, *Leguminosæ*, *Labiataæ*, *Cruciferaæ*, *Scrophulariaceæ*.



*Cupuliferæ*, and a few other orders, it is in excess, while in the *Gramineæ*, *Cyperaceæ*, *Rosaceæ*, *Filices*, &c., the Essex flora leads.

In the comparison with the flora of the State of Illinois one is struck by the marked similarity in the position of the groups, notwithstanding the well-known differences in the actual species. In the *Gamopetalæ* and total *Dichlamydeæ*, as also in the *Monochlamydeæ*, the difference is very slight, while in the *Polypetalæ* it disappears entirely. The Dicotyledons are therefore nearly the same, and we find this true also of the Monocotyledons and the Gymnosperms. Whatever slight variations occur in the above-named groups, they are so adjusted as nearly to balance each other, so that when we reach the total *Phænogamia* we again have substantial unison, which, of course, is maintained in the *Cryptogamia*.

This harmony is less pronounced in the larger orders, the *Compositæ* being richer and the *Gramineæ* poorer there than here. In the *Cyperaceæ*, *Leguminosæ*, *Scrophulariaceæ*, and *Filices* the difference is not great, but in the *Rosaceæ*, *Labiataæ*, *Cruciferaæ*, and *Cupuliferæ* the Washington flora is decidedly in advance, and in the *Ericaceæ* it is of course in very marked contrast. In the *Orchidaceæ*, *Polygonaceæ*, *Umbelliferæ*, *Caryophyllaceæ*, and *Polemoniaceæ* there is substantial or exact identity. In the *Ranunculaceæ*, *Onagraceæ*, *Naiadaceæ*, and *Liliaceæ*, besides the *Compositæ*, already mentioned, the Illinois flora leads that of Washington. On the whole, there is a remarkable similarity in the *facies* of these two floras, which may be due to their inland situation, with fluviatile areas and similar position as to latitude. Considering, however, the marked specific peculiarities of the flora of the flat prairies of the West, we would have naturally looked for a corresponding distinctiveness in the larger groups and orders.

The comparison of our flora, from this point of view, with those of the Northern and of the Southern States east of the Mississippi River, and with these two combined, as represented in the next three columns, proves of the highest interest and will repay somewhat close inspection. It has often been asked to what extent the flora of Washington is affected by influences of a peculiarly southern character, and while it has generally been conceded that it belongs clearly to the northern section of the country, many facts, such as those previously set forth relative to autumnal flowering and early flowering, as well as to the number of species which exhibit more or less green foliage throughout the winter, combine to give it a decidedly southern aspect. In so far as the method which

has been here adopted of testing such questions can be relied upon, this southern leaning on the part of the Washington flora is clearly exhibited in this table. In letting the eye follow columns 4 and 5 the differences are well marked in nearly all the groups and in most of the large orders. These are what express statistically the essential characteristics of the northern as contrasted with the southern flora. It is also obvious that the figures in column 6 will in most cases express the mean between these two extremes. To obtain the true position of our flora, it is necessary to observe toward which of these extremes it most nearly approaches, and whether it falls on the northern or southern side of the mean established by column 6. In instituting this comparison we perceive at the outset that in the Polypetalous Division it falls so far on the southern side as to come within four-tenths of one per cent. of being identical with the flora of the Southern States. In the *Gamopetalæ*, however, it agrees quite closely with the flora of the Northern States, so that in the *Dichlamydeæ*, as a whole, it coincides very well with the mean for both sections. The *Monochlamydeæ* agree better with those of the Southern States, and the total Dicotyledons fall largely on the southern side of the mean. The Monocotyledons also fall somewhat on the southern side, while the Gymnosperms are below the mean which here corresponds with the southern flora. This leaves the total Phænogams occupying an intermediate position. The Cryptogams are also very nearly intermediate, though approaching the northern side.

Considering next the relations of the large orders, we find that in the *Compositæ* our flora is northern in aspect. In the *Gramineæ* it is very exceptionally rich, surpassing all the larger areas and approaching that of Essex County, Massachusetts. In the *Cyperaceæ*, which are peculiarly typical for the purpose on account of being all indigenous in all the floras, it does not correspond at all either with the northern section or with the average of both sections, but does agree very closely with the exceptionally meager representations of the southern 'flora. The *Leguminosæ* are here northern in aspect, the *Rosaceæ*, like the *Gramineæ*, exceptionally rich, far exceeding either section, as is also the case with the *Labiataæ* and the *Cruciferaæ*. The ferns are northern in their degree of representation, as are the *Ranunculaceæ*, while the *Ericaceæ* and *Scrophulariaceæ* are southern. The *Cupuliferaæ* again are anomalous and tower above all other floras. The *Liliaceæ* are southern, as are also the *Orchidaceæ*. The *Polygonaceæ* are in excess and in so far southern in aspect, while the *Umbelliferaæ*, also in excess, denote a northern inclina-

tion. The *Caryophyllaceæ* are remarkable for showing the same percentage in all of the four floras now under comparison. The *Salicaceæ* are largely in excess of every flora compared in the table except that of Essex County, Massachusetts, while the *Onagraceæ* and *Saxifragaceæ* both fall below the normal, the latter, however, showing a southern tendency. The *Naiadaceæ* are southern, as are also the *Polemoniaceæ*, while the *Chenopodiaceæ* are slightly in excess in their degree of representation.

Now, as this locality has been classed as northern, we should not expect to find it occupying an intermediate position, which would place it on the boundary line between the northern and the southern flora, but we should expect to find it agreeing closely with the northern flora, or at least lying midway statistically, as it does geographically, between the dividing line or medium represented by the total eastern flora and the northern flora. So far from this being the case, however, we actually find it occupying a position considerably below this medium line and between this and the line of the southern flora; a position which would be geographically represented by the latitude of Nashville or Raleigh, or even by Memphis or Chattanooga.

This result is very remarkable, and while the proofs from statistics are perhaps not alone to be relied upon, it serves to confirm many facts recorded in this work, and others not yet recorded, which have puzzled the observers of the phenomena of the vegetable kingdom in this locality.

The results of the careful comparison of the two remaining columns need not be here summed up, as the reader will readily perceive their general import, and he will not be likely to stop with considering the relations of the local flora with those of the far West, but will probably seek for more general laws governing the vegetation of the eastern and western sections, as we have already done to some extent for the northern and southern sections.

#### X. ABUNDANT SPECIES.

It was Humboldt who remarked that of the three great Kingdoms of Nature—the Mineral, the Vegetable, and the Animal—it is the Vegetable Kingdom which contributes most to give character to a landscape. This is very true, and it is also true that botanists rarely take account of this fact. The latter are always interested in the relative numbers of species belonging to different Classes, Families, and Genera, rather than to the mere superficial aspect of the vegetation. It is, however, not the num-

ber of species, but of individuals, which give any particular flora its distinguishing characteristics to all but systematic botanists; and it is also upon this that in the main depends the commercial and industrial value of the plant-life of every region of the globe. It is often the omnipresence of a few, or even of a single, abundant species that stamps its peculiar character upon the landscape of a locality. This is to a far greater extent true of many other regions, especially in the far West, than it is of this; the vegetation of the rural surroundings of Washington is of a highly-varied character, as much so perhaps as that of any other part of the United States; and yet there are a comparatively few species which from their abundance chiefly lend character to the landscape and really constitute the great bulk of the vegetation.

The most prominent, if not actually the most numerous, of these are, of course, certain trees, and notably several species of oak. Probably the most abundant tree everywhere here, as in nearly all parts of the country, is *Quercus alba*, the white oak; but *Q. Prinus*, the chestnut oak, *Q. coccinea*, the scarlet oak, *Q. palustris*, the swamp oak, and *Q. falcata*, the Spanish oak, are also exceedingly common. The most abundant hickory is *Carya tomentosa*, the mocker-nut. *Liriodendron Tulipifera*, the tulip-tree, often improperly called white poplar, besides being one of the commonest trees, is the true monarch of our forests, often attaining an immense size. It is a truly beautiful tree, whose ample foliage well warrants the recent apparently successful experiments in introducing it as a shade-tree for the streets of the city. Among other common trees may be mentioned the chestnut (*Castanea vulgaris*, Lam., var. *Americana*, A. DC.), the beech (*Fagus ferruginea*), the red maple (*Acer rubrum*), the sycamore (*Platanus occidentalis*), the red or river birch (*Betula nigra*), the white elm (*Ulmus Americana*), the sour gum (*Nyssa multiflora*), the sweet gum (*Liquidambar styraciflua*), the scrub pine (*Pinus inops*), the pitch-pine (*P. rigida*), and the yellow pine (*P. mitis*).

Of the smaller trees, *Cornus florida*, the flowering dogwood, and *Cercis Canadensis*, the red-bud or Judas tree, are very abundant and chiefly conspicuous in the spring from the profusion of their showy blossoms; all three species of sumac are common; *Hamamelis Virginica*, the witch-hazel, and *Viburnum prunifolium*, the black-haw, abound; *Sassafras officinale*, the sassafras, *Castanea pumila*, the chinquapin, and *Juniperus Virginiana*, the red cedar, also belong to this class.

Of the smaller shrubby vegetation we may safely claim as abundant *Cornus sericea* and *C. alternifolia*, the silky, and the alternate-leaved

cornel; *Viburnum acerifolium*, *V. dentatum*, and *V. nudum*, arrow-woods; *Gaylussacia resinosa*, the high-bush huckleberry; *Vaccinium stamineum*, the deerberry; *V. vacillans* and *V. corymbosum*, the blueberries; *Leucothoë racemosa*; *Andromeda Mariana*, the stagger-bush; *Kalmia latifolia*, the American laurel or calico-bush; *Rhododendron nudiflorum*, the purple azalea or pinxter-flower; and *Lindera Benzoin*, the spice-bush.

Of vines, besides three species of grape which are abundant, we have *Ampelopsis Virginiana*, the Virginian creeper or American woodbine, *Rhus Toxicodendron*, the poison ivy, and *Tecoma radicans*, the trumpet vine, which give great beauty and variety to the scenery.

The most richly represented herbaceous species may be enumerated somewhat in their systematic order. Of *Polypetalæ* may be mentioned *Ranunculus repens*, *Oimicifuga racemosa*, *Dentaria laciniata*, *Viola cucullata*, *V. pedata*, var. *bicolor*, and *V. tricolor*, var. *arvensis*; *Stellaria pubera*, *Cerastium oblongifolium*, *Geranium maculatum*, *Impatiens pallida*, and *I. fulva*; *Desmodium nudiflorum*, *D. acuminatum*, and *D. Dillenii*; *Vicia Caroliniana*, *Potentilla Canadensis*, *Geum album*, *Saxifraga Virginiensis*, *Oenothera fruticosa*, and *Thaspium barbinode*. In the *Gamopetalæ* before *Compositæ* we have *Galium Aparine*, *Mitchella repens*, *Houstonia purpurea*, and *H. cærulea*. In the *Compositæ* the most conspicuous are *Vernonia Novboracense*, *Eupatorium purpureum*, *Liatris graminifolia*, *Aster patens*, *A. ericoides*, *A. simplex*, and *A. miser*; *Solidago nemoralis*, *S. Canadensis*, *S. altissima*, and *S. ulmifolia*; *Chrysopsis Mariana*, *Ambrosia trifida*, and *A. artemisiæfolia* (these behaving like introduced weeds); *Helianthus divaricatus*, *Actinomeris squarrosa*, *Rudbeckia laciniata*, and *R. fulgida*; *Coreopsis verticillata*, *Bidens cernua*, *Verbesina Siegesbeckia*, *Gnaphalium polycephalum*, *Antennaria plantaginifolia*, *Hieracium venosum*, and *H. Gronovii*; *Nabalus albus* and *N. Fraseri*; *Lactuca Canadensis*.

The remaining *Gamopetalæ* furnish as abundant species: *Lobelia spicata*, *Chimaphila umbellata*, and *C. maculata*; *Veronica officinalis* and *V. Virginica*; *Gerardia flava*, *Verbena hastata*, and *V. urticæfolia*; *Pycnanthemum incanum* and *P. linifolium*, *Collinsonia Canadensis*, *Salvia lyrata*, *Monarda fistulosa*, and *M. punctata*; *Nepeta Glechoma*, *Brunella vulgaris*, *Mertensia Virginica*, *Phlox paniculata*, and *P. divaricata*; *Solanum Carolinense* and *Asclepias Cornuti*.

Of herbaceous *Monochlamydæ* may be named *Polygonum Virginianum*, *P. sagittatum*, and *P. dumetorum*; *Laportea Canadensis*, *Pilea pumila*, and *Bakheria cylindrica*.

The Monocotyledons give us *Arisæma triphyllum*, the Indian turnip, *Sagittaria variabilis*, *Aplectrum hyemale*, *Erythronium Americanum*, *Luzula campestris*, *Juncus effusus*, *J. marginatus*, and *J. tenuis*; *Pontederia cordata*. Of the Cyperi, *C. phymatodes*, *C. strigosus*, and *C. ovularis* are the most common; *Eleocharis obtusa* and *E. palustris*, *Scirpus pungens*, & *atrovirens*, *S. polyphyllus*, and *S. Eriophorum* are very conspicuous. Of Carices, *C. crinita*, *C. intumescens*, the various forms of *C. laxiflora*, *C. platyphylla*, *C. rosea*, *C. scoparia*, *C. squarrosa*, *C. straminea*, *C. angustata*, *C. tentaculata*, *C. virescens*, and *C. vulpinoides* are the most obtrusive.

In the Gramineæ, those which most uniformly strike the eye are *Agrostis scabra*, *Muhlenbergia Mexicana*, and *M. sylvatica*; *Tricuspis sceleroides*, *Eatonia Pennsylvanica*, *Poa pratensis*, *P. sylvestris*, and *P. brevifolia*; *Eragrostis pectinacea*, *Festuca nutans*, *Bromus ciliatus*, *Elymus Virginicus*, *Danthonia spicata*, *Anthoxanthum odoratum*, *Panicum virgatum*, *P. latifolium*, *P. dichotomum* (with a multitude of forms), and *P. depauperatum*; *Andropogon Virginicus* and *A. scoparius*.

Of ferns, *Polypodium vulgare*, *Pteris aquilina*, *Adiantum pedatum*, *Asplenium ebeneum*, and *A. Filix-femina*; *Phegopteris hexagonoptera*, *Aspidium acrostichoides*, *A. marginale*, and *A. Novæboracense*; *Osmunda regalis*, *O. Claytoniana*, and *O. cinnamomea* are the most constantly met with. *Lycopodium lucidulum* is quite common, and *L. complanatum* is very abundant in certain localities.

Besides the above, which are all indigenous to our flora, there are of course many introduced species in the vicinity of the city and of cultivation everywhere, which manifest here as elsewhere their characteristic tendency to crowd out other plants and monopolize the soil.

Such are the most general features which the traveler, accustomed to observe the vegetable characteristics of localities visited, may expect to see when he pays his respects to the Potomac Valley. To some, even this imperfect description might furnish a fair idea of our floral scenery without actually seeing it.

#### XI. CLASSIFICATION ADOPTED.

In endeavoring to conform to the latest authoritative decisions relative to the most natural system of classification, I have followed, with one exception, the arrangement of the *Genera Plantarum* of Benth and Hooker, so far as this goes, and the accepted authorities of Europe and America for the remainder. For the *Gamopetalæ* after *Compositæ* however, covered by Professor Gray's *Synoptical Flora of North America*, I have followed that work, which is substantially in harmony with

*mera Plantarum*. In the arrangement of the orders, too, for the *talæ*, Mr. Sereno Watson's *Botanical Index* has in all cases been med to, as also not materially deviating from the order adopted atham and Hooker. In the genera there are numerous discrep- between the works last named, and in the majority of these cases merican authorities have been followed. For example, Bentham ooker have thrown *Dentaria* into *Cardamine*, *Elodes* into *Hyper- lmpelopsis* into *Vitis*, and *Pastinaca* and *Archemora* into *Peuced- The change of *Spergularia* to *Lepigonum* is adopted, as well as a terations in orthography where the etymology seemed to demand as *Pyrus* to *Pirus* and *Zanthoxylum* to *Xanthoxylum*. I have also ed to follow Bentham and Hooker in the changes which they have in the terminations of many ordinal names. The termination ; doubtless quite arbitrary in many cases, and perhaps cannot be led on etymological grounds, but as a strictly ordinal ending it one good service in placing botanical nomenclature on a more fic footing. It is also true that the old system does not always y it, as in some of the largest orders, *e. g.* *Cruciferae*, *Leguminosae*, *vitæ*, *Labiatae*; but whatever changes are made should rather be direction of making it universal than less general. Bentham ooker do not adopt a universal termination, neither do they a the prevailing one, and they retain it in the majority of cases; certain cases, for which they doubtless have special reasons, they tute a different one, and one which is often far less euphonious. llowing are the orders represented in this catalogue in which the ation *aceæ* is retained by American and altered by English ities:*

American.	English.	American.	English.
ridaceæ.	Berberideæ.	Cactaceæ.	Cactææ.
ceæ.	Cistineæ.	Valerianaceæ.	Valerianeæ.
ceæ.	Violarieæ.	Asclepiadaceæ.	Asclepiadeæ.
alaceæ.	Polygaleæ.	Gentianaceæ.	Gentianeæ.
phyllaceæ.	Caryophylleæ.	Borraginaceæ.	Boragineæ.
lacaceæ.	Portulaceæ.	Scrophulariaceæ.	Scrophularineæ.
icaceæ.	Hypericineæ.	Lentibulaceæ.	Lentibularieæ.
raceæ.	Celastrineæ.	Plantaginaceæ.	Plantagineæ.
æ.	Ampelideæ.	Nyctaginaceæ.	Nyctagineæ.
agaceæ.	Saxifrageæ.	Lauraceæ.	Laurineæ.
melaceæ.	Hamamelideæ.	Juglandaceæ.	Juglandææ.
aceæ.	Lythrarieæ.	Salicaceæ.	Salicineæ.
raceæ.	Onagrarieæ.	Ceratophyllaceæ.	Ceratophylleæ.
loraceæ.	Passifloreæ.		

On the other hand, the British authorities are followed in uniting the *Saururaceæ* with the *Piperaceæ*, and also in placing the *Paronychiaceæ*, reduced to a sub-order, under the *Illecebraceæ*; but from the certain relationship of this order with the *Caryophyllaceæ*, it is deemed unnatural to separate these two orders by putting the former into the Monochlamydeous Division. (See *American Naturalist*, November, 1878, p. 72.) On the same ground of apparently close relationship, I have followed Bentham and Hooker in abolishing the *Callitrichaceæ* and placing *Callitriche* in the *Haloragaceæ*. But I have followed Gray and Watson in keeping the *Fumariaceæ* distinct from the *Papaveraceæ*, and the *Lobeliaceæ* from the *Campanulaceæ*, as also in preserving the *Ericaceæ* intact, and not slicing off the *Vacciniaceæ* from one end and the *Monotropaceæ* from the other, as is done in the *Genera Plantarum*.

In the *Gamopetalæ* before, and including *Compositæ*, in the *Monochlamydeæ*, and throughout the Monocotyledons, serious difficulties occur in consequence of a want of recent systematic works from the American point of view. In nearly all cases the names as well as the arrangement of Gray's *Manual*, fifth edition, have here been adopted. I have, however, been able to avail myself of a number of recent revisions of genera made by Gray, Watson, and Engelmann,\* and published in various forms, chiefly in the Proceedings of the American Academy of Arts and Sciences. I have also derived many useful hints from the *Flora of California*, from the botanical reports of the various Western surveys, from Sargent's *Catalogue of the Forest Trees of North America*, and from the *Flora of Essex County, Massachusetts*.

Mr. M. S. Bebb, of Rockford, Ill., has shown great kindness, not only in determining all the uncertain *Salices*, but in generously drawing up a list of them in the order of their nearest natural relationships, which is followed implicitly in the catalogue.

For the ferns, the magnificent work of Professor Eaton has furnished everything that could be desired, and is unswervingly adhered to.

The following genera in the *Compositæ* have been changed by Bentham and Hooker, but the new names cannot be adopted until the species have

\* While I have gladly adopted the arrangement of the species of *Quercus*, decided upon by Dr. Engelmann after so careful a study, I cannot do so without recording a gentle protest against the position to which he assigns *Q. palustris*, viz., between *Q. falcata* and *Q. nigra*, and far removed from *Q. rubra*. Not only its shallow, finely-scaled cup, but especially its light-colored buds and thin early leaves, as also a special *facies* belonging to its aments and foliage, ally this species with *Q. rubra*, and distinguish these two species as a group from all others found in this flora.



been worked up by American botanists. The old ones are therefore retained with a simple indication of the recent disposition:

*Diplopappus* has been included in *Aster*.

*Maruta* has been included in *Anthemis*.

*Leucanthemum* has been included in *Chrysanthemum*.

*Cacalia* has been included in *Senecio*.

*Lappa* has been made *Arctium*.

*Cynthia* has been included in *Krigia*.

*Mulgedium* has been included in *Lactuca*.

*Nabalus* has been made *Prenanthes*.

*Valerianella*, Moench, has also been made co-extensive with *Fedia*, Gaertn., and is preferred by those authors.

Several of these cases are a return to the older names, and whether they will be adopted by American authorities it is impossible to say.

Two discrepancies are noted between the *Genera Plantarum* and Gray's *Synoptical Flora*: The genus *Steironema* is wholly ignored by Bentham and Hooker, unless the reference to *Steiromeria* in the Addenda to Vol. II (p. 1240) refers to it with an erroneous orthography. Professor Gray also declines to follow the English botanists in referring *Acerates* to *Gomphocarpus*.

It remains to consider the one deviation above referred to from the prevailing system of botanical classification which it has been thought proper to make in the subjoined list of plants. This consists in placing the Gymnosperms, here represented only by the single order *Coniferae*, after the Monocotyledons and next to the Cryptogams. It is not the proper place here to state the already well known grounds upon which this position of the Gymnosperms has been defended. (See *American Naturalist*, June, 1878, pp. 359 to 378.) It is sufficient to point out that the correctness of this arrangement was recognized by Adrien de Jussieu, and has been repeatedly maintained by later botanists of eminence. The object in adopting it here, however, is not simply because it seems fully justified by the present known characters of plants, for consistently to do this would also require that the *Polypetales* be placed before the *Monochlamydeæ* (in the descending series), and that numerous other changes be made. So wide a departure from the existing system would seriously detract from the convenience of the work as a practical aid to the local botanist, and, aside from the labyrinth of nice and critical points into which it must inevitably lead, would not be advisable in the present state of botanical literature. But as the position

of the Gymnosperms is the most glaringly inconsistent of all the defects of the present so-called Natural System, and as the *Coniferae* are represented here by only four genera and seven species, it is evident that no serious objection could arise on the ground of inconvenience, whilst at the same time it may serve some useful purpose in directing the mind of botanists who may look over the work to the obvious rationality of this classification, and contribute its mite toward awakening them to the recognition of a truth which, I cannot doubt, must sooner or later find expression in all accepted versions of the true order of Nature with respect to the vegetable kingdom.

#### XII. COMMON NAMES.

I am well aware that in recent times it has become more and more the practice among botanists to eschew all common or popular names of plants. This sentiment I share to a great extent, and will therefore remark at the outset that the best common name for a plant is always its systematic name, and this should be made a substitute for other popular names wherever and whenever it can be done. In most cases the names of the genera can be employed with entire convenience and safety; and in many cases they are to be defended on the ground of euphony. How much better, for example, the name *Brusella* sounds than either Self-heal or Heal-all; both of which latter, so far as their meaning goes, express an utter falsehood. Some works professing to give common names frequently repeat the generic name as such. This has seemed to me both unnecessary and calculated to mislead. It is not done where other accepted common names exist, and thus the implication is that in such cases it is incorrect to use the Latin name. Again, it is only done for the commoner species, leaving it to be inferred that there is no popular way of designating the rarer ones. The plan here followed is to regard the genus the best name to use in all cases and as, *ex officio*, the proper common name of every plant, and therefore not in need of being repeated in different type as such in any case. But in addition it has been deemed best to give such appropriate or well-established common names as can be found. Some scientific men seem disposed to forget that it is the things rather than the names that constitute the objects of scientific study. There is a vast amount of true scientific observation made by mere school-girls and rustics who do not know the name of the branch of science they are pursuing. A plant by whatever name or by no name at all is scien-

tific knowledge, and the devotees of science should care less for the means than the end which they have in view. Individuals differ in their constitution and character. The sound or sight of a Latin word is sometimes sufficient, in consequence of ineradicable constitutional or acquired idiosyncrasies, to repel a promising young man or woman from the pursuit of a science for which genuine aptitude and fondness exist. For such and other classes common English names have a true scientific value. The object should be to inspire a love for plants in all who can be made to take an interest in them, and to this end to render the science of botany attractive by every legitimate means available. In so far, therefore, as English names of plants can be made conducive to this end they should be employed. Their inadequacy to the true needs of the science in its later stages cannot fail to impress itself upon all who pursue it to any considerable extent.

Finally, common names are not wholly without their scientific uses. A few of them have proved more persistent than any of the systematic names, as I have had occasion to observe in examining the *Prodromus Floræ Columbianæ* of 1830, in which difficult work, I must confess, they frequently rendered me efficient aid in determining the identity of plants which the Latin names used did not reveal.

In appending common names to the plants of this vicinity, the *Native Wild Flowers and Ferns of the United States*, by Prof. Thomas Meehan, has been followed in most cases so far as this work goes; but this of course embraces but a fraction of the entire flora. Most of the remaining names are taken from Gray's *Manual of Botany* and from his *Synoptical Flora of the United States*. In many cases some of the names given, which do not seem appropriate, are omitted, and in a few cases those given have been slightly changed. A small number of local names not found in any book, but in themselves very expressive, have been given, as "Curly-Head" for *Clematis ochroleuca*, &c.; and in a few other cases names have been assigned to abundant species on the analogy of those given for allied genera or species.

### XIII. CONCLUDING REMARKS.

The foregoing remarks on the value of common names naturally suggest a few general reflections, with which our introduction will conclude.

The popularization of science is now a leading theme of scientific men. To accomplish this, certain branches of science must first become a part of liberal culture. The pursuit of fashion, which is usually re-

garded as productive solely of evil, may be made an agency of good. If, for example, it could become as much of a disgrace to be found ignorant of the flora or fauna of one's native place as it now is to be found ignorant of the rules of social etiquette or the contents of the last new novel, devotees of botany and natural history would immediately become legion, and the woods and fields would be incessantly searched for specimens and objects of scientific interest. It should be the acknowledged work of educationalists to make science fashionable, and call to their aid these powerful social sentiments in demanding the recognition of its legitimate claims.

Of all the natural sciences, that of botany is the most easily converted into a branch of culture. Its objects appeal directly to the highest esthetic faculties. It naturally allies itself with the arts of drawing, painting, and sketching, and the deeper the insight into its mysteries the more strongly does it appeal to the imagination. Its pursuit, besides being the best possible restorer of lost, and preserver of good health, is a perpetual source of the purest and liveliest pleasure. The companionship of plants, which those who do not know them cannot have, is scarcely second to that of human friends. The botanist is never alone. Wherever he goes he is surrounded by these interesting companions. A source of pure delight even where they are all familiarly known to him, unlike those of his own kind, they grow in interest as their acquaintance grows less intimate, and in all his travels they multiply immensely his resources of enjoyment. The man of science wonders what the unscientific can find to render travel a pleasure, and it must be confessed that a great many tourists of both sexes go at the behest of fashion, and care little more for Nature when crossing the Alps than did Julius Cæsar, who could only complain of the bad roads and while away the hours in writing his grammatical treatise, *De Analogia*. While all forms of natural science, so far from paralyzing the esthetic faculties, tend powerfully to quicken them, that of natural history, and especially of botany, awakens such an interest in Nature and her beautiful objects that those who have once tasted pleasures of this class may well consider other pleasures insipid.

But notwithstanding these attractions, which botany possesses above other sciences, there exists among a small class of scientific men a disposition to look down upon it as lacking scientific dignity, as mere pastime for school-girls or fanatical specialists. This feeling is most obvious among zoölogists, who, some of them, affect to disdain the more humble forms of life and the simplicity of the tame and stationary plant.

This sentiment, though now happily rare, is natural, and really constitutes what there is left of that proud spirit with which man has ever approached the problems of Nature. His first studies disdained even so complicated an organism as man himself, and spent themselves in the pursuit of spiritual entities wholly beyond the sphere of science. Later he deigned to study *mind* detached from body and from matter; still later he attacked some of the higher manifestations of *life*. Ethics came next, and social organization; then anthropological questions were opened, afterwards those of physiology and anatomy, and at last comparative anatomy and structural zoölogy were taken up. Phytology brought up the rear and was long confined to the most superficial aspects. It is only in recent times that plants and all the other lowly organisms have commenced to receive proper attention, and only since this has been done has there been made any real progress in solving the problems of biology. It is a paradox in science that its most complicated forms must first be studied and its simplest forms last, while only through an acquaintance with the latter can a fundamental knowledge of the former be obtained. The history of biological science furnishes many striking illustrations of this truth, the most interesting of which is perhaps to be found in the labors of the two great French savants, Cuvier and Lamarck. The former spent his life and powers in the study of vertebrate zoölogy, amid the most complex living organisms. The latter devoted his energies to botany and to invertebrate zoölogy, including the protozoan and protistan kingdoms. The former founded his great theory of types and his cosmology of successive annihilations and reconstructions of the life of the globe. The latter promulgated his theory of unbroken descent with modification. The conclusions of the former were accepted in his day and are rejected in ours; those of the latter were condemned in his own lifetime, but now form the very warp of scientific opinion.

Let no botanist, therefore, or person contemplating the study of botany, be deterred by the lowly nature of the objects he would cultivate. The humblest flower or coarsest weed may contain lessons of wisdom more profound than can be drawn from the most complicated conditions of life or of mind.

The city of Washington is becoming more and more a center, not only of scientific learning and research, but also of art and every form of liberal culture. Already the public schools have reached out and taken botany into their curriculum, and we have seen that as a field for

the pursuit of this branch of science the environs of the National Capital are in a high degree adapted. Science and culture must go hand in hand. Culture must become more scientific, and science more cultured. Botany has an important part to perform in this work of reconciliation, and there is no good reason why Washington may not become one of the *foci* from which these influences are to radiate. It has been such reflections as these, aside from the practical needs for such a work, that have encouraged me to persevere in this humble, indeed, but not the less laborious task, and if it shall be found useful, to however slight a degree, in promoting these worthy objects, no regrets will ever arise at having undertaken it.

#### XIV. EXPLANATIONS.

The catalogue which follows, with the accompanying remarks on the several species, will be better understood by attending to the following explanations:

1. The *habitat* of plants is not specified unless it is in some way peculiar or different from that given in the manuals.

2. *Localities* are given only of plants that are confined, so far as known, to a single spot or to the particular places named in connection with them. When the locality is omitted, therefore, it may be inferred that the plant is common, at least in such situations as constitute its natural habitat.

3. The word "rare," said of a plant whose locality is not stated, signifies that there is no particular place where the collector can be sure to find it, although it may have been sparingly found in several places. Attached to a stated locality, the word "rare" implies that the plant is rare, and perhaps no longer obtainable, in that locality. Localities given without this word may be depended on to furnish the plants.

4. The general designations, "Reform School," "Terra Cotta," &c., embrace the regions in the vicinity of these points, as more fully described in the introduction.

5. Where a plant has only been found once or quite recently, if discovered by a botanist other than the author, the name of the discoverer is stated, inclosed in parentheses. Credit is thus sought to be given to the true discoverer of all new additions to the flora.\*

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\* Of the 213 additions which have been made to the flora of this vicinity since the publication of the catalogue of 1876, 100, or over 75 per cent., have been the result of the author's own personal investigations.

6. The dates given are usually those of flowering, except in case of the *Carices*, when they indicate the time of fully-developed perigynia, and in the *Cryptogams*, where it is aimed to show the period of developed spores. As before remarked, they are compiled from actual dates at which the plants have been collected or observed, due allowance being made for the condition of each specimen when collected. While, therefore, many of them may doubtless be found at other dates, the collector will usually be safe in keeping within the limits noted. Where an exact date is stated, this implies that the plant has only been found once and on that date; or if two such dates are given, these are the only times the species has been seen.

7. The date of fruiting is only stated where this is important to the collector, *i. e.*, where it is necessary or preferable that the fruit be collected at a particular time. Where fruiting follows naturally upon flowering, or where the fruit persists so as to be obtainable at any time in the fall or winter, these facts are not specially stated unless they are in some manner peculiar to this locality.

8. In genera embracing a number of species to all of which the common name will apply, this is only given for the first, *e. g.*, *Pycnanthemum linifolium*, Mountain Mint; the designation "Mountain Mint" being equally applicable to *P. incanum*, *P. clinopodioides*, or any other species.

9. Species with the dagger (†) prefixed occur under the same or some other name in Brereton's *Prodromus*.

1. The first part of the document is a list of names.

2. The second part of the document is a list of names.

3. The third part of the document is a list of names.

4. The fourth part of the document is a list of names.



## XV. FLORA.

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### PHÆNOGAMIA.

### DICOTYLEDONS.

#### RANUNCULACEÆ.

#### CROWFOOT FAMILY.

† ***Clematis ochroleuca*, Ait. CURLY HEAD.**

Near Fort Scott and below Hunting Creek, Virginia. Middle of May; fruit in June.

† ***Clematis Viorna*, L. LEATHER-FLOWER.**

Second week in June; fruit in August.

† ***Clematis Virginiana*, L. VIRGIN'S BOWER.**

Eastern Branch Marsh. September 1 to 15; fruit in October.

† ***Thalictrum anemonoides*, Michx. RUE-ANEMONE. WIND-FLOWER MEADOW-RUE**

Last of March to middle of April; fruit in May.

† ***Thalictrum dioicum*, L. EARLY MEADOW-RUE.**

Last half of April; fruit in May.

† ***Thalictrum purpurascens*, L. PURPLE MEADOW-RUE.**

May 20 to June 10.

***Thalictrum purpurascens*, L., var. *ceriferum*, C. F. Austin. WAX-LEAVED MEADOW-RUE.**

High Island, growing very large (2<sup>m</sup> to 2½<sup>m</sup> high). First week in June.

***Thalictrum Cornuti*, L. TALL MEADOW-RUE.**

June 1 to 20.

† ***Anemone Virginiana*, L. VIRGINIAN ANEMONE.**

Middle to end of June; fruit late in July.

† ***Anemone nemorosa*, L. WIND-FLOWER. WOOD-ANEMONE.**

In small patches; not common. Middle to end of April.

† ***Anemone Hepatica*, L. [*Hepatica triloba*, Chaix.] LIVER-LEAF. HEPATICA.**

Dry wooded hillsides; common. February 20 to April 10.

†*Ranunculus ambigua*, Watson. [*R. alismaefolius*, Geyer.] WATER-PLANTAIN  
SPEARWORT.

Eastern Branch Marsh; also, marsh near the mouth of Hunting Creek. Middle of  
June; fruit in July.

†*Ranunculus pusillus*, Poir. SMALL SPEARWORT.

A remarkable form having large floating leaves on long petioles, resembling those  
of a *Potamogeton*, was found April 30, 1881, in a partially dried pond near the First  
Lock of the Canal. As the locality had been repeatedly examined before, its recent  
introduction there seems probable. The typical form occurs on the Potomac Flats  
above Eads' Mill.

†*Ranunculus abortivus*, L. SMALL-FLOWERED CROWFOOT.

April and May.

*Ranunculus abortivus*, L., var. *micranthus*, Nutt.

High Island. April. Autumnal flowers, November 28, 1875.

†*Ranunculus sceleratus*, L. CURSED CROWFOOT.

Early in May.

†*Ranunculus recurvatus*, Poir. HOOKED CROWFOOT

First half of May; fruit in June.

†*Ranunculus repens*, L. CREEPING CROWFOOT.

April. Two marked varieties occur, one upland, small and early blooming and  
disappearing; the other in damp ground, glabrous, later, and much larger; throw-  
ing out long runners and surviving through the summer. Still a third form spar-  
ingly found in wet, springy places, with large, shining, spotted leaves, very late  
flowering (third week in May), runners constituting the greater part of the plant,  
and the flowers rarely setting fruit. The last found only in one place between  
Chain Bridge and Fort Ethan Allen. The two following probably cover these ex-  
tremes.

†*Ranunculus repens*, L., var. *hispidus*, T. & G.

Early in April; fruit in May.

†*Ranunculus repens*, L., var. *nitidus*, Chapman.

May; fruit in June or July.

†*Ranunculus bulbosus*, L. BUTTERCUPS.

May.

†*Ranunculus acris*, L. TALL CROWFOOT.

Early in June.

†*Aquilegia Canadensis*, L. WILD COLUMBINE.

End of May.

*Delphinium tricornis*, Michx. DWARF LARKSPUR.

Found only on the second of the chain of islands in the Potomac above the  
Feeder Dam. Middle to end of April.

*Delphinium Consolida*, L. FIELD LARKSPUR.

Sparingly escaped and depauperate in form. July.

†*Aconitum uncinatum*, L. WILD MONKSHOOD.

Last half of September.

† *Cimicifuga racemosa*, Nutt. BLACK SNAKE-ROOT.

Third week in June; fruit late in September.

**MAGNOLIACEÆ.**

MAGNOLIA FAMILY.

† *Magnolia glauca*, L. LAUREL MAGNOLIA. SWEET BAY.

In all swamps, but being rapidly destroyed by people in search of the flowers. First half of June; fruit, end of August.

† *Liriodendron Tulipifera*, L. TULIP-TREE.

The largest and handsomest of the forest trees of this vicinity. Its introduction as an ornamental shade tree promises to be successful. Third week in May; fruit, August.

**ANONACEÆ.**

CUSTARD-APPLE FAMILY.

† *Asimina triloba*, Duval. PAPAW.

Common in damp woods. Usually a bush or small tree; a specimen 60<sup>cm</sup> in girth 75<sup>cm</sup> above the base was noted on Rock Creek, in the Cascade Ravine. April; fruit ripe in September.

**MENISPERMACEÆ.**

MOONSEED FAMILY.

*Menispermum Canadense*, L. CANADIAN MOONSEED.

Leaves exhibiting great variations in the lobation. First week in June; fruit in August.

**BERBERIDACEÆ.**

BARBERRY FAMILY.

*Berberis vulgaris*, L. BARBERRY.

Hedge near Edgewood, now destroyed. May.

† *Caulophyllum thalictroides*, Michx. BLUE COHOSH.

High Island. Early in April; fruit in May.

*Jeffersonia diphylla*, Pers. TWIN-LEAF.

High Island and islands above. Fruit nodding when ripe. Last week in March or first week in April; fruit ripe in May.

† *Podophyllum peltatum*, L. MANDRAKE. MAY-APPLE.

Early in May; fruit ripe in July.

**NYMPHÆACEÆ.**

WATER-LILY FAMILY.

*Brasenia peltata*, Pursh. WATER-SHIELD.

Carberry Meadows below Eads' Mill. Suddenly made its appearance in 1880 in a familiar pond. Discovered independently by Dr. Foreman and myself, on the same morning (July 18). Only one flower seen. It reappeared in 1881 and bore fruit (collected July 17), but seems to show diminished vitality.

† *Nuphar advena*, Alt. YELLOW POND-LILY. SPATTER-DOCK  
May.

† *Nymphæa odorata*, Ait. SWEET-SCENTED WATER-LILY.

In a pool on the summit of a high rocky headland below Great Falls, July 6, 1879.  
Also found the same year by Mr. William Palmer on the Potomac Flats below the Long Bridge, growing among the *Zizania*.

**SARRACENIACEÆ.**

## PITCHER-PLANT FAMILY.

† *Sarracenia purpurea*, L. SIDE-SADDLE FLOWER. PITCHER-PLANT.

Meadow between the Washington Driving Park and Bladensburg, near Beaver Dam Branch. May 21, 1878.

**PAPAVERACEÆ.**

## POPPY FAMILY.

*Papaver dubium*, L. SMOOTH-FRUITED CORN-POPPY.

High Island, rare. June 23, 1878.

† *Sanguinaria Canadensis*, L. BLOOD-ROOT.

Middle to end of March; fruit in April.

*Chelidonium majus*, L. CELANDINE.

Not common. First half of May.

**FUMARIACEÆ.**

## FUMITORY FAMILY.

*Dicentra Cucullaria*, DC. DUTCHMAN'S BREECHES.

April 4 to 20.

*Corydalis flavula*, Raf. COLIC-WEED.

Middle of March to middle of April; fruit in May.

† *Fumaria officinalis*, L. FUMITORY.

Uniontown. May 10 to 30.

**CRUCIFERÆ.**

## MUSTARD FAMILY.

*Nasturtium officinale*, R. Br. WATER-CRESS.

Second week in May; continues flowering all summer.

† *Nasturtium sylvestris*, R. Br. YELLOW CRESS.

Hunting Creek and Alexandria. Middle of May.

*Nasturtium obtusum*, Nutt.

Near the Washington Monument. Few reliable characters can be found to distinguish this species from the next. The fruit cannot be depended upon for this purpose. The large, irregular lobes of the lower leaves serve, however, to give it a different aspect.

*Nasturtium palustre*, DC. MARSH-CRESS.

Tending to invade the streets and gutters. August and September.

***Nasturtium lacustre*, Gray. LAKE-CRESS.**

Only found in one of the numerous pools among the rocks below Great Falls. In flowering time, at the end of June, it presents three kinds of leaves. The pond in which it has been submersed during the spring, and where it has borne only dissected leaves, is then dry, and the long stems lie prostrate on the muddy bottom with the whorls of these leaves adherent to them. At the base a rosette of broad, green leaves, more or less lobed or lyrate, springs up, while the upper portion of the stem below the flowers bears small, lanceolate or oblong, entire leaves.

***Nasturtium Armoracia*, Fries. HORSE-RADISH.**

Very sparingly escaped.

***Barbarea vulgaris*, R. Br. WINTER-CRESS.**

Early in April.

***Barbarea praecox*, R. Br. EARLY WINTER-CRESS. SOURVY-GRASS.**

First week in April. Rosettes of radical leaves develop during the winter.

**† *Arabis lyrata*, L. ROCK-CRESS.**

On much exposed rocks. The radical leaves can only be obtained very early in April or even in March. April.

***Arabis dentata*, Torr. and Gray.**

High Island and islands above; also South shore of the Potomac. April.

***Arabis patens*, Sulliv.**

Sandy Landing. Rare. Middle to end of April; pods persistent until August.

***Arabis hirsuta*, Scop.**

Near Sandy Landing. Mr. C. S. Sheldon, May 22, 1881; then with young fruit.

**† *Arabis laevigata*, Poir. TOWER-MUSTARD.**

April.

**† *Arabis Canadensis*, L. SICKLE-POD.**

Third week in May; fruit in July.

**† *Cardamine rhomboidea*, DC. SPRING-CRESS.**

Early in April.

**† *Cardamine hirsuta*, L. BITTER CRESS.**

Always wholly glabrous. First week in April. Autumnal flowers collected October 3, 1880.

**† *Cardamine hirsuta*, L., var. *sylvatica*, Gray.**

A much smaller plant than the last, and apparently distinct. Pleasantly flavored. First week in April.

**† *Dentaria heterophylla*, Nutt. DIVERSE-LEAVED TOOTHWORT.**

Virginia shore of the Potomac, above Georgetown. Middle of March to middle of April.

**† *Dentaria laciniata*, Muhl. CUT-LEAVED TOOTHWORT.**

Middle of March to middle of April. When this species and the last are found growing together there is a difference of a week in their flowering time, this being the earlier.

***Draba ramosissima*, Desv. BRANCHING WHITLOW-GRASS.**

Rocks at Harper's Ferry; may be looked for nearer. May 30, 1873.

Bull. Nat. Mus. No. 22—5

**VIOLACEÆ.**

**VIOLET FAMILY.**

† *Viola lanceolata*, L. LANCE-LEAVED VIOLET.

Meadow above Benning's Station. End of April.

*Viola primulæfolia*, L. PRIMROSE-LEAVED VIOLET.

End of April.

† *Viola cucullata*, Ait. COMMON BLUE VIOLET.

Last week in April.

† *Viola cucullata*, Ait., var. *palmata*, Gray. HAND-LEAF VIOLET.

Middle of May.

† *Viola cucullata*, Ait., var. *oordata*, Gray.

Not common. Leaves often out-lobed near the base, usually villous. Third week in April.

† *Viola sagittata*, Ait. ARROW-LEAVED VIOLET.

Middle of April.

† *Viola pedata*, L. BIRD'S-FOOT VIOLET.

The type, or mono-colored form, rare. Third week in April.

*Viola pedata*, L., var. *bicolor*, Pursh.

Very common on dry gravelly hills. March and April.

† *Viola striata*, Ait. PALE VIOLET.

Little Falls, High Island, and islands above. There is a very large autumnal form of this plant. First half of May. Autumnal flowers collected September 10, 1876.

*Viola pubescens*, Ait. DOWNY YELLOW VIOLET.

First half of May.

† *Viola pubescens*, Ait., var. *erlocarpa*, Nutt.

*Viola glabella*, Nutt. [*V. pubescens*, Ait., var. *scabrinuscula*, Torr. & Gray.]

High Island. First week in April.

† *Viola tricolor*, L., var. *arvensis*, Ging. WILD PANSY.

Apparently indigenous. April 1 to 20.

*Ionidium concolor*, Benth. & Hook. [*Solea concolor*, Ging.] GREEN VIOLET.

High Island and islands above. First week in May; fruit in July.

**POLYGALACEÆ.**

**MILKWORT FAMILY.**

*Polygala incarnata*, L. MILKWORT.

August or September.

† *Polygala sanguinea*, L.

July to October.

*Polygala fastigiata*, Nutt.

August to October.

First half of June.

**CARYOPHYLLACEÆ.**

**PINK FAMILY.**

†*Dianthus Armeria*, L. DEPTFORD PINK.

June. Autumnal flowers observed October 9, 1881.

†*Saponaria officinalis*, L. SOAPWORT. BOUNCING BET.

June and July.

†*Silene stellata*, Ait. STARRY CAMPION.

August.

*Silene nivea*, DC. SNOWY CAMPION.

High Island. First week in June.

†*Silene Pennsylvanica*, Michx. WILD PINK.

April.

*Silene Armeria*, L. SWEET-WILLIAM CATCHFLY.

Near Giesboro'. A few specimens found June 2, 1878. Locality exhausted.

†*Silene antirrhina*, L. SLEEPY CATCHFLY.

Fields. Middle of May.

†*Lychnis Githago*, Lam. CORN COCKLE.

Last week in May.

†*Cerastium viscosum*, L. [*C. vulgatum*, Gray's Manual.] MOUSE-EAR CHICKWEED.

A form with leaves 17<sup>mm</sup> wide and 25<sup>mm</sup> long, or nearly orbicular, was found by Professor Chickering at Cabin John Run in May, 1875. March to May.

†*Cerastium vulgatum*, L. [*C. viscosum*, Gray's Manual.] LARGER MOUSE-EAR CHICKWEED.

†*Stellaria pubera*, Michx. GREAT CHICKWEED.

This plant flowers early in April, bearing large showy flowers on long peduncles from small plants with ovate leaves  $2\frac{1}{4}$ cm. to  $3\frac{1}{4}$ cm long. These plants then go to seed and drop down, while new shoots from the same root spring up at the end of May, becoming much larger than the early ones, and bearing large obovate oblong leaves 8cm to 13cm long. These secondary plants are usually sterile, but frequently bear a few flowers at the summit; these are very small and on short peduncles, more or less concealed among the upper leaves.

†*Stellaria longifolia*, Muhl. LONG-LEAVED STITCHWORT.

May or June.

†*Arenaria serpyllifolia*, L. THYME-LEAVED SANDWORT.

Late in May.

*Sagina apetala*, L. PEARLWORT.

First Lock. Not seen since May 23, 1877, when it was discovered by the Rev. Thomas Morong. Locality now exhausted.

*Sagina decumbens*, Torr. & Gray. [*S. subulata*, Gray's Manual.]

Rare, around dwellings in the city. Latter part of May.

†*Lepidogonum rubrum*, Fries. [*Spergularia rubra*, Presl, var. *campestris*, Gray.] SAND SPURRY.

Chiefly found in the streets of the city, with the habit of *Mollugo verticillata*. May or June.

## ILLECEBRACEÆ.

## WHITLOW-WORT FAMILY.

†*Anychia dichotoma*, Michx. FORKED CHICKWEED.

Dry woodlands; not common. July or August.

*Anychia dichotoma*, Michx., var. *capillacea*, Torr. SLENDER FORKED CHICKWEED. July.*Paronychia dichotoma*, Nutt. WHITLOW-WORT.

Among the rocks at Little Falls. Middle of September to middle of October.

## PORTULACACEÆ.

## PURSLANE FAMILY.

†*Portulaca oleracea*, L. PURSLANE, or "PUSSLEY." End of June.†*Claytonia Virginica*, L. SPRING BEAUTY.

End of February to middle of March.

## HYPERICACEÆ.

## ST. JOHN'S-WORT FAMILY.

†*Ascyrum Crux-Andree*, L. ST. ANDREW'S CROSS.

July to September.

†*Ascyrum stans*, Michx. ST. PETER'S-WORT.

Found in one spot two miles above Bladensburg, in a swamp, in fruit, October 20, 1878. Probably flowers in August.



August to October.

† *Hypericum Sarrothra*, Michx. ORANGE-GRASS.  
September.

† *Elodes Virginica*, Nutt. MARSH ST. JOHN'S-WORT.  
July 15 to August 10.

#### **MALVACEÆ.**

##### **MALLOW FAMILY.**

† *Malva rotundifolia*, L. COMMON MALLOW.  
May to October.

*Malva sylvestris*, L. HIGH MALLOW.  
Georgetown, near end of Aqueduct Bridge. Early in July.

† *Sida spinosa*, L.  
Last half of July.

† *Abutilon Avicennæ*, Gaertn. VELVET-LEAF  
August.

† *Hibiscus Moscheutos*, L. SWAMP ROSE-MALLOW.  
Late in July.

† *Hibiscus militaria*, Cav. HALBERD-LEAVED ROSE-MALLOW.  
End of July or in August.

*Hibiscus Trionum*, L. BLADDER-KETMIA. FLOWER-OF-AN-HOUR.  
Rare. End of August.

#### **TILIACEÆ.**

##### **LINDEN FAMILY.**

† *Tilia Americana*, L. AMERICAN LINDEN. BASSWOOD.

*Linum striatum*, Walt.

Reform School. Falls Church. Third week in July.

† *Linum usitatissimum*, L. COMMON FLAX.

Waste places in the city. August.

GERANIACEÆ.

GERANIUM FAMILY.

† *Geranium maculatum*, L. SPOTTED CRANESBILL.

April or May.

† *Geranium Carolinianum*, L. CAROLINA CRANESBILL.

May.

*Geranium columbinum*, L. LONG-STALKED CRANESBILL.

In one small spot on Hunting Creek, also near Rosslyn on the Falls Church Road (Professor Chickering). Last half of May.

*Geranium pusillum*, L. SMALL-FLOWERED CRANESBILL.

Main street of Bladensburg. Latter part of May.

*Erodium cicutarium*, L'Her. STORKSBILL.

Found only near the canal, at the foot of Eighteenth street; apparently introduced and scarcely able to maintain its hold against opposition. March 20 to June.

† *Oxalis violacea*, L. VIOLET WOOD-SORREL.

Occasionally found with a large conical tap-root, which, however, is clear, transparent, and watery, and shrinks away almost entirely on drying. This tap-root proceeds from the bottom of the bulb. It terminates in a few small fibers and throws off other and finer lateral ones. The plant has not been seen to bear fruit here. Last half of May.

† *Oxalis corniculata*, L., var. *stricta*, Sav. [*O. stricta*, L.] YELLOW WOOD-SORREL.

April to June.

† *Impatiens pallida*, Nutt. PALE TOUCH-ME-NOT.

June to September.

† *Impatiens fulva*, Nutt. SPOTTED TOUCH-ME-NOT.

June to September.

RUTACEÆ.

RUE FAMILY.

*Xanthoxylum Americanum*, Mill. PRICKLY ASH. TOOTHACHE-TREE.

Pierce's Mill. Probably originally cultivated.

† *Ptelea trifoliata*, L. HOP-TREE. SHRUBBY TREFOIL.

Last half of May.

ILICINEÆ.

HOLLY FAMILY.

† *Ilex opaca*, Ait. AMERICAN HOLLY.

Usually small, but in one locality, on Paint Branch, trees were found measuring one meter in girth some distance above the base. End of May.

***Ilex decidua*, Walt.**

High Island. Great Falls. Third week in May; fruit ripe in September.

**†*Ilex verticillata*, Gray. WINTERBERRY.**

Middle of June.

**†*Ilex laevigata*, Gray.**

Limb of the corolla in the staminate flowers reflexed. Two weeks earlier flowering than the last. First week in June.

**CELASTRACEÆ.****STAFF-TREE FAMILY.*****Euonymus atropurpureus*, Jacq. WAAHOO. BURNING BUSH.**

Second week in June.

**†*Euonymus Americanus*, L. STRAWBERRY BUSH.**

First week in June; fruit, last of September.

***Euonymus Americanus*, L., var. *obovatus*, Torr. & Gray.**

A mere form of the last. Third week in May.

**†*Celastrus scandens*, L. WAX-WORK. CLIMBING BITTERSWEET.**

Third week in May; fruit opens in November.

**RHAMNACEÆ.****BUCKTHORN FAMILY.****†*Ceanothus Americanus*, L. RED-ROOT. NEW JERSEY TEA.**

Third week in June.

***Ceanothus ovatus*, Desf. [*Ceanothus ovalis*, Bigelow.]**

Rocks at Little Falls. Middle of May.

**VITACEÆ.****VINE FAMILY.****†*Vitis Labrusca*, L. NORTHERN FOX-GRAPE.**

First week in June; fruit in September.

***Vitis æstivalis*, Michx. SUMMER GRAPE.**

A form with very deeply lobed leaves is frequently met with. End of May; fruit, middle of September.

**†*Vitis cordifolia*, Lam. WINTER GRAPE. FROST GRAPE.**

Last week in May; fruit in November.

**†*Vitis riparia*, Michx.**

Second or third week in May, and about ten days earlier than the last; fruit ripe in November.

***Vitis vulpina*, L. SOUTHERN FOX-GRAPE.**

First found very sparingly on rocks immediately above Sandy Landing, Md., May 22, 1881, then in flower; and again later (June 4) with young fruit, on the Flats a short distance below the Chain Bridge.

**†*Ampelopsis quinquefolia*, Michx. VIRGINIAN CREEPER. AMERICAN WOODBINE.**

End of May.

SAPINDACEÆ.

SOAPBERRY FAMILY.

***Acer saccharinum*, Wang. SUGAR-MAPLE. HARD MAPLE.**

Early in May. Only one certainly indigenous tree known; this is located on the fourth of the islands above High Island (Sugar-Maple Island); it has borne nothing but leaves since its discovery in 1876. Qy.: Is this for want of cross-fertilization?

***Acer dasycarpum*, Ehrh. SILVER MAPLE.**

Less common than *A. rubrum* in the wild state. Generally planted in the streets of the city, where it often flowers in January and tends to become wholly dioecious. January 15 to March.

† ***Acer rubrum*, L. RED MAPLE. SWAMP-MAPLE.**

Last of February to first of April.

† ***Negundo aceroides*, Moench. BOX-ELDER.**

Third week in April.

***Staphylea trifolia*, L. AMERICAN BLADDER-NUT.**

First week in May.

ANACARDIACEÆ.

CASHEW FAMILY.

***Rhus typhina*, L. STAGHORN SUMAC.**

June.

† ***Rhus glabra*, L. SMOOTH SUMAC.**

July.

† ***Rhus copallina*, L. DWARF SUMAC.**

Here becoming large, 8<sup>cm</sup> in diameter and 5<sup>m</sup> to 6<sup>m</sup> high. Last half of July.

† ***Rhus venenata*, DC. POISON SUMAC.**

Common in swamps. First half of July. Found also occasionally growing on dry ground, where it flowers at the end of May.

† ***Rhus Toxicodendron*, L. POISON IVY.**

Everywhere abundant. Pith on small vines, when clinging tightly to a support, always near the outer side. (See *American Naturalist*, April, 1876, p. 232.) Last half of May.

***Rhus aromatica*, Ait. FRAGRANT SUMAC.**

Broadwater. A single bush discovered by Mr. E. O. Graves. It bears pistillate flowers each year, which never mature because not fertilized. Last half of April.

LEGUMINOSÆ.

PULSE FAMILY.

† ***Baptisia tinctoria*, R. Br. WILD INDIGO.**

Third week in June.

† ***Baptisia australis*, R. Br. BLUE FALSE INDIGO.**

Rocky river bottoms at Little Falls. Last of May or early in June.

† *Crotalaria sagittalis*, L. RATTLE-BOX.

Last half of August.

† *Lupinus perennis*, L. WILD LUPINE.

Last of April or first of May.

*Cytisus scoparius*, Link. SCOTCH BROOM.

Roadside, near the northern corner of the District. Last of May or first of June.

*Medicago sativa*, L. LUCERNE. ALFALFA.

Sparingly escaped.

*Medicago lupulina*, L. BLACK MEDICK. NONESUCH.

May.

*Mellilotus officinalis*, Willd. YELLOW MELILOT.

Streets of Washington. Rare. First half of June.

† *Mellilotus alba*, Lam. WHITE MELILOT.

June.

† *Trifolium arvense*, L. RABBIT-FOOT CLOVER.

Latter part of June.

† *Trifolium pratense*, L. RED CLOVER.

June.

† *Trifolium reflexum*, L. BUFFALO-CLOVER.

High Island. End of May. Rare.

† *Trifolium repens*, L. WHITE CLOVER.

May or June.

*Trifolium agrarium*, L. HOP-CLOVER.

June to July.

† *Trifolium procumbens*, L. LOW HOP-CLOVER.

May to June.

† *Tephrosia Virginiana*, Pers. HOARY PEA. GOAT'S RUE.

Second week in June.

† *Robinia Pseudacacia*, L. LOCUST.

Third week in May.

† *Astragalus Canadensis*, L. MILK-VETCH.

Potomac Shore, Va.; also on High Island. End of June.

† *Stylosanthes elatior*, Swartz. PENCIL-FLOWER.

August.

† *Desmodium nudiflorum*, DC. TICK-TREFOIL.

Last of July.

† *Desmodium acuminatum*, DC.

August or first of September.

*Desmodium pauciflorum*, DC.

Rare. Last of August or first of September.

†*Desmodium rotundifolium*, DC.

September.

*Desmodium rotundifolium*, DC., var. *glabratum*, Gray.

Near Great Falls (Professor Chickering).

*Desmodium canescens*, DC.

End of August.

*Desmodium cuspidatum*, Hook.

Northwest Branch (Professor Chickering, 1878).

*Desmodium laevigatum*, DC.

August or September.

†*Desmodium viridiflorum*, Beck.

Reform School. September.

*Desmodium Dillenti*, Darl.

August or September.

†*Desmodium paniculatum*, DC.

Last of July or first of August.

*Desmodium rigidum*, DC.

September.

†*Desmodium ciliare*, DC.

Reform School. September.

†*Desmodium Marylandicum*, Boott.

Reform School. September.

†*Lespedeza repens*, Bart. BUSH-CLOVER.

The two forms are well marked here, not only by the difference of pubescence, but by the greater abundance of flowers on the downy variety (*L. procumbens*, Michx.). Latter part of August or early in September.

*Lespedeza reticulata*, Pers., var. *angustifolia*, Maxim. [*Lespedeza violacea*, Pers., var. *angustifolia*, Gray.]

September.

†*Lespedeza violacea*, Pers.

September.

*Lespedeza Stuevei*, Nutt.

Reform School. September.

†*Lespedeza hirta*, Ell.

September.

*Lespedeza capitata*, Michx.

September.

*Vicia sativa*, L. VETCH. TARE.

Last half of May.

*Vicia tetrasperma*, Loisel.

Insane Asylum. Early in June.

- Rock Creek; Terra Cotta. Rare, and seldom fruiting. Second week in J
- † *Amphicarpaea monoloba*, Ell. HOG PEANUT.  
September.
- † *Apios tuberosa*, Moench. GROUND-NUT.  
Last of July or first of August.
- † *Galactia mollis*, Michx. MILK-PEA.  
August.
- † *Phaseolus perennia*, Walt. WILD BEAN.  
Great Falls (Professor Chickering). Locks above Chain Bridge (Dr. Vas
- † *Phaseolus helvolus*, L.  
August.
- Rhynchosia tomentosa*, Torr. & Gray.  
A single specimen, out of flower, found September 14, 1879, near Bladensl
- † *Gleditschia triacanthos*, L. HONEY-LOCUST.  
End of May; fruit, July or August.
- † *Cassia Marylandica*, L. WILD SENNA.  
End of May.
- † *Cassia Chamæcrista*, L. SENSITIVE PEA.  
August.
- † *Cassia nictitans*, L. SMALL-FLOWERED WILD SENSITIVE PEA.  
August.
- † *Cercis Canadensis*, L. RED-BUD. JUDAS-TREE.  
April.

**Prunus Chickasaw**, Michx. CHICKASAW PLUM.

Fort Mahan Third week in April.

**Prunus spinosa**, L. SLOE. BLACK THORN.

Roadside above Benning's. Third week in April.

† **Prunus Virginiana**, L. CHOKE-CHERRY.

Opposite Alexandria (Professor Seaman). Hunting Creek (Dr. Vasey, 1977).

**Prunus serotina**, Ehrh. BLACK CHERRY.

Middle of May.

† **Spiraea salicifolia**, L. MEADOW-SWEET.

Very rare; not seen since 1874.

**Spiraea Aruncus**, L. GOAT'S-BEARD.

First half of June.

† **Nedelia opulifolia**, Benth. & Hook. [*Spiraea opulifolia*, L.] NINE-BARK.

Last week in May.

† **Gillenia trifoliata**, Moench. INDIAN PHYSIC. AMERICAN IPECAC.

End of May.

† **Rubus occidentalis**, L. BLACK RASPBERRY.

Last of May or first of June; fruit ripe before the end of June.

† **Rubus villosus**, Ait. BLACKBERRY.

A variety was found May 17, 1874, which is "between *R. villosus* and *R. trivialis*" (Gray). It has single flowers on long peduncles. Last half of May; fruit in July; autumnal flowers September 22 and October 27, 1878.

† **Rubus Canadensis**, L. DEWBERRY.

Middle of May; fruit, third week in July.

**Rubus hispidus**, L. RUNNING SWAMP-BLACKBERRY.

Second week in June.

**Rubus cuneifolius**, Pursh. SAND-BLACKBERRY.

Insane Asylum. First of June.

† **Geum album**, Gmel. AVENS. HERB BENNETT.

July.

† **Geum Virginianum**, L.

Hunting Creek. July.

**Geum strictum**, Ait.

Hunting Creek. Last of May or first of June.

**Geum vernum**, Torr. & Gray. SPRING AVENS.

Georgetown College Grounds. End of April.

† **Fragaria Virginiana**, Duchesne. STRAWBERRY.

May; wild frt it not ripe till June.

**Fragaria Indica**, Andr. MOCK STRAWBERRY.

Mount Vernon; Georgetown College Grounds (Chickering). Last half of May; fruit ripe early in June.



†*Potentilla Norvegica*, L.

August or September.

†*Potentilla Canadensis*, L. CINQUE-FOIL. FIVE-FINGER.

April.

†*Potentilla Canadensis*, L., var. *simplex*, Torr. & Gray.

May.

*Alchemilla arvensis*, Scop. LADY'S MANTLE.

Only once found, on Meridian Hill, by Dr. Vasey and Professor Chickering. Long since obliterated.

†*Agrimonia Eupatoria*, L. COMMON AGRIMONY.

July or August.

†*Agrimonia parviflora*, Hook. SMALL-FLOWERED AGRIMONY.

August or September.

†*Poterium Canadense*, Benth. & Hook. CANADIAN BURNET.

Third week in September.

*Poterium Sanguisorba*, L. BURNET.

Odenton, Md., May 30, 1877. Should be looked for nearer.

*Rosa setigera*, Michx. CLIMBING ROSE.

Escaped in some places. June.

*Rosa Carolina*, L. SWAMP ROSE.

June.

*Rosa lucida*, Ehrh. DWARF WILD ROSE.

End of May.

†*Rosa rubiginosa*, L. SWEET-BRIER.

June.

*Rosa micrantha*, Smith. SMALLER-FLOWERED SWEET-BRIER.

June.

*Rosa canina*, L. DOG-ROSE.

High Island.

†*Pirus coronaria*, L. AMERICAN CRAB-APPLE.

Northwest Branch (Professor Chickering); a few trees only. End of April or first of May.

†*Pirus arbutifolia*, L. CHOKE-BERRY.

Two forms, a high and a low bush, the former of which flowers two weeks later than the latter, grows in very moist swamps, and bears much smaller berries, which persist throughout the winter. End of April (low-bush) to middle of May (high-bush).

†*Pirus arbutifolia*, L., var. *melanocarpa*, Hook.

North of Bladensburg. Fruit collected July 20, 1879.

*Crataegus cordata*, Ait. WASHINGTON THORN.

Rock Creek Church Road near Soldiers' Home, also Bladensburg. Not common. Second week in June; fruit in October.

***Crataegus Oxyacantha*, L. ENGLISH HAWTHORN.**

Near Alexandria. Last of April or first of May; fruit in October.

†***Crataegus coccinea*, L. SCARLET-FRUITED THORN.**

End of May.

***Crataegus Crus-galli*, L. COCKSPUR THORN.**

Latter part of May.

***Crataegus parvifolia*, Ait. DWARF THORN.**

High Island (a single bush), also Great Falls. Third week in May.

†***Amelanchier Canadensis*, Torr. & Gray. JUNE-BERRY. SERVICE-BERRY. SHAD-BUSH.**

April; fruit, middle of June.

***Amelanchier Canadensis*, var. *oblongifolia*, Torr. & Gray.**

A greatly reduced form of this is common along ditches, flowering at the height of  $\frac{1}{2}$  meter. April.

#### SAXIFRAGACEÆ.

##### SAXIFRAGE FAMILY.

†***Saxifraga Virginiana*, Michx. EARLY WHITE SAXIFRAGE.**

The flowers open from among the rosettes of leaves before the stem is apparent and continue centrifugally as the stem and branches emerge. Last half of March or early in April.

†***Mitella diphylla*, L. MITRE-WORT. BISHOP'S CAP.**

Woodley; rare. First half of May.

†***Heuchera Americana*, L. ALUM-ROOT.**

End of May or beginning of June.

***Chrysosplenium Americanum*, Schwein. GOLDEN SAXIFRAGE.**

Rare, in rocky cataracts. February to April.

†***Hydrangea arborescens*, L. WILD HYDRANGEA.**

Enlarged petals occasionally occur in the outer row of flowers. Late in June.

†***Philadelphus inodorus*, L. MOCK ORANGE. SYRINGA.**

Scarcely found in a wild state. June.

†***Itea Virginica*, L.**

Rare. Eastern Branch; Four Mile Run; Hunting Creek. Third week in May.

***Ribes rotundifolium*, Michx. GOOSEBERRY.**

Soldiers' Home, escaped; also at Mt. Vernon (Professor Chickering). Third week in April; fruit ripe in July.

***Ribes rubrum*, L. RED CURRANT.**

Rare. Not yet collected in fruit. Last of April or first of May.

#### CRASSULACEÆ.

##### ORPINE FAMILY.

†***Sedum ternatum*, Michx. STONE-CROP. ORPINE.**

Last half of May.

*Sedum telephioides*, Michx. WILD LIVE-FOR-EVER.

Rocks at Broadwater. September.

† *Penthorum sedoides*, L. DITCH STONE-CROP.

September.

#### **DROSERACEÆ**

SUNDEW FAMILY.

† *Drosera rotundifolia*, L. SUNDEW.

Holmead Swamp; rare. End of July.

#### **HAMAMELACEÆ**

WITCH-HAZEL FAMILY.

† *Hamamelis Virginiana*, L. WITCH-HAZEL.

October.

† *Liquidambar Styraciflua*, L. SWEET-GUM.

Middle of May.

#### **HALORAGCEÆ**

WATER-MILFOIL FAMILY.

*Myriophyllum spicatum*, L. WATER-MILFOIL.

Found in former years below Alexandria by Mr. Anton Zumbrook. Probably still there.

*Proserpinaca palustris*, L. MERMAID-WEED.

June or July.

† *Callitriche verna*, L. WATER-STARWORT.

April or May.

#### **MELASTOMACEÆ**

MELASTOMA FAMILY.

† *Rhexia Virginica*, L. MEADOW-BEAUTY. DEER-GRASS.

Second half of July.

#### **LYTHRACEÆ**

LOOSESTRIFE FAMILY.

† *Ammannia humilis*, Michx. TOOTH-CUP.

Flats near Eads' Mill. Middle of August.

† *Cuphea viscosissima*, Jacq. CLAMMY CUPHEA. BLUE WAX-WEED.

August.

† *Lythrum alatum*, Pursh. LOOSESTRIFE.

Flats, Outlet Lock to High Island. August.

† *Nesaea verticillata*, H. B. K. SWAMP LOOSESTRIFE.

Flats above Outlet Lock.

#### **ONAGRACEÆ**

EVENING PRIMROSE FAMILY.

† *Epilobium coloratum*, Muhl. WILLOW-HERB.

August or September.

† *Jussaea decurrens*, DC.

Hunting Creek; Custis Spring. Middle of August to end of September.

† *Ludwigia alternifolia*, L. FALSE LOOSESTRIFE.

Last of August.

† *Ludwigia hirtella*, Raf.

Holmead Swamp; rare. Middle of July to August.

† *Ludwigia palustris*, Ell. WATER PURSLANE.

Early in July. Large floating leaves form in running water in October, and submersed plants in still water in early spring.

† *Oenothera biennis*, L. EVENING PRIMROSE.

September or October.

† *Oenothera sinuata*, L.

Railroad, near Benning's Station (Dr. Vasey, 1878).

† *Oenothera fruticosa*, L. SUNDROPS.

June.

*Oenothera fruticosa*, L., var. *linearis*, Watson. [*Oenothera riparia*, Nutt.]

Middle of May to middle of June.

*Gaura biennis*, L.

Bearing large rosettes of red-spotted leaves in autumn. August to October.

† *Cleome Luteolana*, L. ENCHANTER'S NIGHTSHADE.

Last half of June.

PASSIFLORACEÆ.

PASSION-FLOWER FAMILY.

† *Passiflora incarnata*, L. PASSION-FLOWER.

Kendall Green (Professor Chickering).

† *Passiflora lutea*, L.

Last of July or first of August; fruit ripe in October.

CUCURBITACEÆ.

GOURD FAMILY.

† *Sicyos angulatus*, L. STAR-CUCUMBER.

August.

CACTACEÆ.

CACTUS FAMILY.

† *Opuntia vulgaris*, Haworth. CACTUS. PRICKLY PEAR. INDIAN FIG.

Great Falls. Last week in June.

FICOIDEÆ.

† *Mollugo verticillata*, L. CARPET-WEED.

July or August.

Bull. Nat. Mus. No. 22—6

## UMBELLIFERÆ.

## PARSLEY FAMILY.

*Hydrocotyle ranunculoides*, L. WATER PENNYWORT.

Springy place above the Outlet Lock. May to July.

†*Hydrocotyle Americana*, L.

July.

†*Eryngium Virginianum*, Lam. ERYNGO. BUTTON SNAKEROOT.

September.

*Sanicula Canadensis*, L. SANICLE. BLACK SNAKEROOT.

June.

†*Sanicula Marylandica*, L.

Woodley Park. June.

*Erigenia bulbosa*, Nutt. HARBINGER-OF-SPRING.

High Island. Last of March or first of April.

†*Cicuta maculata*, L. SPOTTED COWBANE. MUSQUASH-ROOT. WATER-HEMLOCK.

June to July.

†*Stium cicutifolium*, Gmel. [*Stium lacini*, Michx.] WATER-PARSNIP.

September.

†*Pimpinella integerrima*, Benth. & Hook. [*Zizia integerrima*, DC.]

May to June.

†*Cryptotaenia Canadensis*, DC. HONEWORT.

June.

*Osmorrhiza longistylis*, DC. SWEET CICELY.

Last half of May.

*Osmorrhiza brevistylis*, DC.

High Island. Last week in May.

†*Cherophyllum procumbens*, Crantz. CHERVIL.

First half of May.

*Discopleura capillacea*, DC. MOCK BISHOP-WEED.

Custis Spring. Third week in August.

†*Thaspium barbinode*, Nutt. MEADOW-PARSNIP.

June to August.

†*Thaspium aureum*, Nutt.

High Island. April; fruit in June or July.

†*Thaspium trifoliatum*, Gra.

April; fruit in August.

*Archangelica hirsuta*, To.

July; fruit in September.

*Pastinaca sativa*, L. PARSNIP.

Georgetown. June.

**Archemora rigida**, DC. COWBANE.  
September.

**Heracleum lanatum**, Michx. COW-PARSNIP.  
High Island; scarce. Last of May or first of June.

† **Daucus Carota**, L. CARROT.  
Thoroughly naturalized. For certain peculiarities in the central flowers of the umbels of this plant, see *Field and Forest* for September, 1877, p. 53. June to September.

### ARALIACEÆ.

#### GINSENG FAMILY.

**Aralia spinosa**, L. HERCULES' CLUB.  
Woodley, in one small spot; around Pierce's Mill, probably planted; near the Sligo Creek; also along the Falls Church Road, near Hall's Hill (Professor Chickering). Last of August or first of September.

† **Aralia racemosa**, L. SPIKENARD.  
Rather rare. July.

**Aralia nudicaulis**, L. WILD SARSAPARILLA.  
Last half of May.

† **Aralia trifolia**, Decne. DWARF GINSENG.  
Deep shaded ravines, rare. First half of May.

### CORNACEÆ.

#### DOGWOOD FAMILY.

† **Cornus florida**, L. FLOWERING DOGWOOD.  
Middle of April to middle of May.

† **Cornus sericea**, L. SILKY CORNEL. KINNIKINNIK.  
Middle to end of June.

**Cornus stolonifera**, Michx. RED-OSIER DOGWOOD.  
June.

**Cornus alternifolia**, L. ALTERNATE-LEAVED CORNEL.  
Third week in May.

† **Nyssa multiflora**, Wang. SOUR GUM. TUPELO. PEPPERIDGE.  
Found flowering (♂) while yet a mere shrub 1<sup>m</sup> in height. Last of May.

### CAPRIFOLIACEÆ.

#### HONEYSUCKLE FAMILY.

† **Sambucus Canadensis**, L. ELDER.  
Second or third week in June; fruit in July.

† **Viburnum prunifolium**, L. BLACK HAW.  
First week in May; fruit in October.

† **Viburnum nudum**, L. WITHE-ROD.  
Last half of May; fruit in September

†*Viburnum dentatum*, L. ARROW-WOOD.

Last half of May; fruit in September.

*Viburnum pubescens*, Pursh.

Great Falls and below, where it is abundant, but had been overlooked until discovered by Prof. J. H. Comstock, May 22, 1881, at which time it was in fine flowering condition.

†*Viburnum acerifolium*, L. MAPLE-LEAVED ARROW-WOOD. DOCKMACKIE.

Latter part of May; fruit in September.

†*Triosteum perfoliatum*, L. HORSE-GENTIAN. FEVERWORT.

First half of June.

*Triosteum angustifolium*, L. SMALLER HORSE-GENTIAN.

Corcoran's Woods; Great Falls; High Island. First week in May.

*Symphoricarpos racemosus*, Michx. SNOWBERRY.

End of May or first of June; fruit last of July.

†*Symphoricarpos vulgaris*, Michx. CORAL-BERRY. INDIAN CURRANT.

Latter part of August; fruit, December and through the winter.

*Lonicera sempervirens*, Ait. TRUMPET HONEYSUCKLE.

The yellow-flowered variety is common. First week in June; fruit, early in July.

*Lonicera Japonica*, Andr. [*L. confusa*, DC.] JAPANESE HONEYSUCKLE.

Well established in many remote places. In a wild state the lower leaves often found deeply lobed or lyrate. Usually flowers twice, in May and in September or October.

## RUBIACEÆ.

## MADDER FAMILY.

†*Cephalanthus occidentalis*, L. BUTTON-BUSH.

First week in July.

†*Houstonia purpurea*, L. VENUS'S PRIDE.

May 10 to June 10. Autumnal flowers, October 13, 1878.

†*Houstonia purpurea*, L., var. *longifolia*, Gray.

Rocky places; appears to be a good species. June. Autumnal flowers, September 12, 1880.

†*Houstonia cœrulea*, L. BLUETS.

March and April. Autumnal flowers, September 7, 1879.

†*Mitchella repens*, L. PARTRIDGE-BERRY.

First half of June; fruit, November and persistent throughout the year.

†*Diodia teres*, Walt. BUTTON-WEED.

July.

*Galium Aparine*, L. CLEAVERS. GOOSE-GRASS.

May.

*Galium asprellum* Michx. ROUGH BEDSTRAW.

Cameron Run. Last of September or first of October.

*Gallium concinnum*, Torr. & Gray. BEDSTRAW  
First half of June.

† *Gallium trifidum*, L. SMALL BEDSTRAW.  
Last of May.

† *Gallium triflorum*, Michx. SWEET-SCENTED BEDSTRAW.  
July.

† *Gallium pilosum*, Ait.  
Last of May and first half of June.

† *Gallium circesiana*, Michx. WILD LIQUORICE.  
Last of May and first half of June.

#### VALERIANACEÆ

##### VALERIAN FAMILY.

*Valeriana pauciflora*, Michx. VALERIAN.  
High Island; Larkspur Island. Third week in May.

*Pedia oleria*, Vahl. [*Valerianella*, Benth. & Hook., Gen. Pl.] CORN-SALAD. LAMB-LETTUCE.  
Insane Asylum; Green Spring Schuetzen Park. Last of April or first half of May.

*Pedia Fagopyrum*, Torr. & Gray.  
High Island (Professor Chickering).

† *Pedia radiata*, Michx.  
Near the Distributing Reservoir; rare. Middle of May.

#### DIPSACÆ

##### TEASEL FAMILY.

† *Dipsacus sylvestris*, Mill. WILD TEASEL.  
Along the Potomac, on the flats from the Outlet Lock to High Island. Last half of July.

#### COMPOSITÆ

##### COMPOSITE FAMILY.

† *Vernonia noveboracensis*, Willd. IRON-WEED. FLAT-TOP.  
Heads very variable in size. July to September.

† *Elephantopus carolinianus*, Willd. ELEPHANT'S-FOOT.  
August.

† *Eupatorium purpureum*, L. JOE-PYE WEED. TRUMPET-WEED.  
A form occurs with nearly white flowers, green stems, thin leaves, and blackish joints to the stem. August, September.

† *Eupatorium hyssopifolium*, L.  
Not common. Roots thickening almost into tubers. Last of August to October.

† *Eupatorium album*, L.  
Varies in the width and thickness of the leaves. Late in July and through August.



†*Eupatorium teucriifolium*, Willd.

September.

†*Eupatorium rotundifolium*, L.

August and September.

†*Eupatorium pubescens*, Muhl.

Forms occur uniting this species and the preceding. September.

†*Eupatorium sessilifolium*, L. UPLAND BONESET.

July to September.

*Eupatorium sessilifolium* × *pubescens*, Gray.

"Between *sessilifolium* and *pubescens*" (Professor Asa Gray). Above Pierce's Mill. September 30, 1877.

†*Eupatorium perfoliatum*, L. THOROUGH WORT. BONESET.

A specimen with all the leaves in whorls of three was found by Prof. M. H. Doolittle, October 26, 1879, near the Receiving Reservoir. August to October.

†*Eupatorium ageratoides*, L. WHITE SNAKEROOT.

August, September.

†*Eupatorium aromaticum*, L.

September.

†*Conoclinium ocolectinum*, DC. [*Eupatorium*, Benth. & Hook., Gen. Pl.] MIST-FLOWER.

August to October.

†*Mikania scandens*, L. CLIMBING HEMP-WEED. CLIMBING BONESET.

Marshes; Four Mile Run; Eastern Branch, &c. September.

†*Kuhnia eupatorioides*, L. FALSE BONESET.

Woodley Park; Terra Cotta. Root very large and deep. September.

*Liatris scariosa*, Willd. BUTTON SNAKEROOT. BLUE BLAZING STAR.

Near Fort Bennett, Va. Only a single specimen found, October 24, 1873, in an advanced state.

*Liatris graminifolia*, Willd. GAY FEATHER.

September.

*Liatris graminifolia*, Willd., var. *dubia*, Gray.

Distinction close if it really exists. September.

†*Chrysopsis Mariana*, Nutt. GOLDEN ASTER. MARYLAND GOLDEN STAR.

August, September.

†*Solidago bicolor*, L. GOLDEN ROD.

September, October.

*Solidago bicolor*, L., var. *concolor*, Gray.

September, October.

†*Solidago latifolia*, L.

August to October.

†*Solidago caesia*, L.

September to October.

***Solidago stricta*, Ait.**

Terra Cotta Swamp. Middle to end of September.

***Solidago speciosa*, Nutt., var. *angustata*, Gray.**

A very distinct form with much the habit of *S. bicolor*, but larger, the stem smooth below, as also the ample radical leaves; flowers yellow and showy. Although Professor Gray has referred it to the above species, still it bears no resemblance to forms from the West (Arkansas) which have also been so referred by the same authority. It will probably be erected into a species. September, October.

***Solidago Virga-aurea*, L., var. *humilis*, Gray.**

Rocks on the Virginia side of the Potomac, below Chain Bridge. Large, often a meter in height. August, September.

***Solidago rigida*, L.**

Woodley Park. A single specimen found, September 22, 1878.

***Solidago elliptica*, Ait.**

This species, which has now been found in several places (Reform School, Terra Cotta Swamp, near Bladensburg, &c.), and has been distributed thus far under the name of *S. neglecta*, Torr. & Gray, has, upon more careful examination, been now referred to *S. elliptica*, though exhibiting numerous variances from the descriptions given of that plant. September.

***Solidago arguta*, Ait.**

The earliest flowering species of our Golden Rods. Middle of July to August.

† ***Solidago altissima*, L.**

A rough and a smooth form. August.

***Solidago ulmifolia*, Muhl. ELM-LEAVED GOLDEN ROD.**

August, September.

***Solidago odora*, Ait. SWEET GOLDEN ROD.**

Late in July and through August.

***Solidago nemoralis*, Ait.**

Middle of August to October.

***Solidago rupestris*, Raf.**

Virginia shore of Potomac, below Little Falls. August 1 to middle of September.

***Solidago Canadensis*, L.**

September, October.

***Solidago gigantea*, Ait.**

Virginia shore of Potomac, below Little Falls; also near Bladensburg. September to middle of October.

† ***Solidago lanceolata*, L.**

Late in September or in October.

† ***Sericocarpus solidagineus*, Nees. WHITE-TOPPED ASTER.**

Middle to end of June.

† ***Sericocarpus conyzoides*, Nees.**

Last of June or first of July.

† *Aster corymbosus*, Ait.

Middle of August to last of September.

*Aster macrophyllus*, L.

The form found here differs from the northern form in the size of the leaf and of the heads and in the number of flowers in the heads, and seems to be intermediate between that and *A. corymbosus*. The large radical leaves, 12<sup>cm</sup> to 14<sup>cm</sup> wide, spring up in thick patches in May. Last of July or first of August.

*Aster concolor*, L.

September.

† *Aster patens*, Ait. SPREADING ASTER.

September.

*Aster laevis*, L.

Some remarkable forms of this species occur. It has only been found in Woodley Park. September.

*Aster laevis*, L., var. *cyaneus*, Gray.

September.

† *Aster undulatus*, L.

September.

*Aster cordifolius*, L.

Late in September and until after frost.

† *Aster ericoides*, L.

September or October. A remarkable diminutive form, with linear appressed leaves thickly covering the simple stems, 12<sup>cm</sup> to 15<sup>cm</sup> high, was found October 5, 1879, on rocks below Great Falls.

*Aster dumosus*, L.

Not common. September.

*Aster Tradescanti*, L.

September, October.

† *Aster miser*, L.

Late in September or in October; varying immensely.

*Aster simplex*, Willd.

September or October.

*Aster tenuifolius*, L.

Narrow-leaved forms of the preceding agree well with authentic specimens of *A. tenuifolius*, though they can scarcely be distinct. September, October.

*Aster carneus*, Nees.

Cameron Run; Potomac above Rosslyn; rare. October.

*Aster setivus*, Ait.

Holmead Swamp; Terra Cotta Swamp. September.

† *Aster puniceus*, L.

September, October.

*Aster puniceus*, L., var. *vimineus*, Gray.

Piney Branch. September, October.

***Aster prenanthoides*, Muhl.**

Cameron Run; Great Falls. Last of September or early in October.

***Aster oblongifolius*, Nutt. •**

Virginia side of the Potomac below the Chain Bridge, also at Great Falls; on rocks. Last half of September and through October.

**† *Aster Novae-Angliae*, L.**

Bluffs of the Potomac (rare), and sparingly in a few other localities. October.

**† *Diplopappus linarifolius*, Hook. [*Aster*, Benth. & Hook., Gen. Pl.] DOUBLE-BRISTLED ASTER.**

September.

***Diplopappus umbellatus*, Torr. & Gray.**

Reform School. September.

***Diplopappus cornifolius*, Darl.**

July to September.

**† *Erigeron Canadensis*, L. HORSE-WEED. BUTTER-WEED.**

July, August.

***Erigeron bellidifolius*, Muhl. ROBIN'S PLANTAIN. POOR ROBIN'S PLANTAIN.**

Middle of April to end of May.

**† *Erigeron Philadelphicus*, L. FLEABANE.**

Last week in April to middle of May.

**† *Erigeron annuus*, Pers. DAISY FLEABANE. SWEET SCABIOUS.**

June to October. (Found as late as October 10, 1873.)

***Erigeron strigosus*, Muhl. DAISY FLEABANE.**

June to August.

***Baccharis halimifolia*, L. GROUNDSEL-TREE.**

One large branching plant found by Dr. Vasey and Professor Chickering on the Aqueduct Road above Cabin John Run, September 17, 1878.

**† *Filago Germanica*, L. HERBA IMPIA.**

Near Occoquan Falls, July 9, 1876; rare. Not yet found strictly within our limits.

**† *Antennaria plantaginifolia*, Hook. PLANTAIN-LEAVED EVERLASTING. MOUSE-EAR EVERLASTING.**

Female plants much larger than the male, often half a meter in height, and both varying widely. Last of March to June.

**† *Gnaphalium polycephalum*, Michx. COMMON EVERLASTING.**

April to August.

**† *Gnaphalium uliginosum*, L. LOW CUDWEED.**

Rare. Near Le Droit Park, July 20, 1873. Wet meadow, sources of Piney Branch, August 5, 1877.

**† *Gnaphalium purpureum*, L. PURPLISH CUDWEED.**

June to August.

**† *Polymnia Canadensis*, L. LEAF-CUP.**

September.

† *Polymnia Uvedalia*, L.

September.

† *Silphium trifoliatum*, L. ROSIN-PLANT.

July.

† *Chrysogonum Virginianum*, L.

April and May. Often flowers at the height of 3<sup>cm</sup> or 4<sup>cm</sup>, and continues flowering while the stem elongates, after the manner of *Saxifraga Virginicensis*, q. v. Autumnal flowers observed October 9, 1881.

† *Ambrosia trifida*, L. GREAT RAGWEED.

August, September.

† *Ambrosia trifida*, L., var. *integrifolia*, Gray.

August, September.

† *Ambrosia artemisiifolia*, L. ROMAN WORMWOOD. HOG-WEED. BITTER-WEED.

Tends to become dioecious, and the fruiting plants crowd out the staminate ones. August, September.

† *Xanthium strumarium*, L. COCKLEBUR.

August, September.

† *Xanthium spinosum*, L. SPINY CLOTHUR.

Abundant in the streets and vacant lots a few years ago, but now becoming fortunately quite scarce. August.

*Heliopsis laevis*, Pers. OX-EYE. FALSE SUNFLOWER

August to September.

† *Eclipta procumbens*, Michx.

This plant behaves like an introduced weed, tending to invade the streets and gutters. It is rare outside of the city. September.

† *Rudbeckia laciniata*, L. CONE-FLOWER.

August, September.

*Rudbeckia triloba*, L.

Little Falls, rare; the lobed lower leaves generally wanting. July, August.

*Rudbeckia hirta*, L.

June, July.

† *Rudbeckia fulgida*, Ait. BRILLIANT CONE-FLOWER.

A form was found near the Woodley Park Bridge, with all the rays tubular. It also exhibits the most remarkable variations in the radical leaves. September.

*Helianthus annuus*, L. COMMON SUNFLOWER.

Sparingly escaped. August.

† *Helianthus angustifolius*, L. WILD SUNFLOWER.

Terra Cotta; Reform School. Middle of September.

*Helianthus occidentalis*, Riddell.

Little Falls, on the rocky flats. Early in September.

† *Helianthus giganteus*, L.

September.

† *Helianthus strumosus*, L.

Not common. September.

*Helianthus strumosus*, L., var. *mollis*, Gray.

Forms of the preceding with the under surface of the leaves quite downy occur, and may be referred here. September.

*Helianthus divaricatus*, L.

July.

† *Helianthus decapetalus*, L.

July, August.

*Helianthus doronicoides*, Lam.

September.

*Helianthus tuberosus*, L. JERUSALEM ARTICHOKE.

Waste places in the city. Late in September and in October.

† *Actinomeris squarrosa*, Nutt.

September.

*Verbesina Siegesbeckia*, Michx. CROWNBEARD.

September.

*Coreopsis tinctoria*, Radins. TICKSEED.

Escaped in a few places. June.

† *Coreopsis verticillata*, L. WHORLED COREOPSIS.

Middle to end of June. Well worthy of cultivation.

† *Coreopsis tripteris*, L. TALL COREOPSIS.

Bluffs below Chain Bridge, Va., High Island, and near Langley. August

*Coreopsis discoides*, Torr. & Gray.

Holmead Swamp. September.

† *Bidens frondosa*, L. COMMON BEGGAR-TICKS.

August, September.

† *Bidens cernua*, L. SMALLER BUR-MARIGOLD.

Very variable. September, October.

† *Bidens chrysanthemoides*, Michx. LARGER BUR-MARIGOLD.

July, August.

† *Bidens bipinnata*, L. SPANISH NEEDLES.

August, September.

† *Helenium autumnale*, L. SNEEZE-WEED. AUTUMN SNEEZEWEED.

August.

† *Achillea Millefolium*, L. YARROW. MILFOIL.

June.

*Anthemis arvensis*, L. CORN CHAMOMILE.

May to October.

† *Maruta Crotula*, DC. [*Anthemis*, Benth. & Hook., Gen. Pl.] MAY-WEED.

Rare. May, June.

†*Leucanthemum vulgare*, L. [*Chrysanthemum*, Benth. & Hook., Gen. Pl.] OX-EYE  
DAISY. WHITE-WEED.

May, June.

†*Arnica nudicaulis*, Ell. LEOPARD'S BANE.

Late in May or early in June. Rather rare.

†*Erechtithites hieracifolia*, Raf. FIRE-WEED.

September.

†*Senecio aureus*, L. GOLDEN RAGWORT. SQUAW-WEED.

Young leaves glabrous, round kidney-shaped, and purple beneath. Alluvial and sandy bottoms. April 1 to May 15.

†*Senecio aureus*, L., var. *Balsamites*, Gray.

This is the upland form, and flowers nearly a month later. It seems to be a distinct species. June.

†*Cacalia suaveolens*, L. [*Senecio*, Benth. & Hook., Gen. Pl.] SWEET-SCENTED  
INDIAN PLANTAIN.

August to October.

†*Cacalia reniformis*, Muhl. GREAT INDIAN PLANTAIN.

High Island; rare. June.

*Cacalia atriplicifolia*, L. PALE INDIAN PLANTAIN.

August.

†*Lappa officinalis*, Allioni. [*Arctium*, Benth. & Hook., Gen. Pl.] BURDOCK.

July.

†*Cnicus lanceolatus*, Gray. [*Cirsium lanceolatum*, Scop.]. COMMON THISTLE. BULL-  
THISTLE.

July.

†*Cnicus discolor*, Gray. [*Cirsium discolor*, Spreng.].

July, August.

*Cnicus altissimus*, Gray. [*Cirsium altissimum*, Spreng.].

June to September.

*Cnicus arvensis*, Gray. [*Cirsium arvense*, Scop.]. CANADA THISTLE.

Waste places in the city. July, August.

*Onopordon acanthium*, L. COTTON-THISTLE. SCOTCH THISTLE.

Formerly found in Washington; abundant in Alexandria. June.

*Centaurea Cyanus*, L. BLUEBOTTLE.

K Street, S. E., over the B. & P. R. R. tunnel. Escaped. June.

*Centaurea Calceitrapa*, L. STAR-THISTLE.

Less common than formerly in Washington; still abundant in Alexandria. Said to have been brought here during the war. July.

*Cichorium Intybus*, L. CHICORY.

June to August.

†*Krigia Virginica*, Willd. DWARF DANDELION.  
April to June.

†*Cynthia Dandelion*, DC. [*Krigia*, Benth. & Hook., Gen. Pl.] DANDELION CYNTHIA.  
Second and third weeks in May.

†*Hieracium scabrum*, Michx. ROUGH HAWK-WEED.  
September.

†*Hieracium Gronovii*, L. HAIRY HAWK-WEED.  
A form occurs having the panicle of *H. venosum* but the achenia of *H. Gronovii*.  
August, September.

†*Hieracium venosum*, L. RATTLESNAKE-WEED.  
Latter part of May.

*Hieracium venosum*, L., var. *subcaulescens*, Gray.  
Roach's Run, above the Long Bridge. May 19, 1878.

†*Hieracium paniculatum*, L. PANICLED HAWK-WEED.  
Left bank of Rock Creek above the Ford; rare. Early part of September.

†*Taraxacum Dens-leonis*, Desf. COMMON DANDELION.  
Flowers the year round unless very cold or very hot and dry.

*Chondrilla juncea*, L.  
Recently introduced, but now becoming abundant everywhere. July. Radical  
and stem leaves should be collected in May.

†*Lactuca Canadensis*, L. WILD LETTUCE.  
June to August.

*Lactuca Canadensis*, L., var. *integrifolia*, Torr. & Gray.  
July, August.

*Mulgedium acuminatum*, DC. [*Lactuca*, Benth. & Hook., Gen. Pl.] FALSE LET-  
TUCE. BLUE LETTUCE.  
Rock Creek. Less common than the next. August, September.

†*Mulgedium Floridanum*, DC.  
August, September.

*Mulgedium leucophseum*, DC.  
Bladensburg (Professor Chickering.)

†*Nabalus albus*, Hook. [*Prenanthes*, Benth. & Hook., Gen. Pl.] WHITE LETTUCE.  
RATTLESNAKE-ROOT.  
September.

†*Nabalus Fraseri*, DC. LION'S-FOOT. GALL-OF-THE-EARTH.  
September.

†*Sonchus oleraceus*, L. COMMON SOW-THISTLE.  
June.

*Sonchus asper*, Vill. SPINY-LEAVED SOW-THISTLE.  
June.



## LOBELIACEÆ.

## LOBELIA FAMILY.

†*Lobelia cardinalis*, L. CARDINAL-FLOWER.

Middle of August to middle of September.

†*Lobelia syphilitica*, L. GREAT LOBELIA.

September.

†*Lobelia puberula*, Michx.

Specimens found October 1, 1876, measured  $1\frac{1}{2}$  m in height. It seems to flower throughout the summer, having been collected in good condition May 30, 1874, June 8, 1873, September 21, 1873, and October 1, 1876.

†*Lobelia spicata*, Lam.

June.

†*Lobelia inflata*, L. INDIAN TOBACCO.

August, September.

## CAMPANULACEÆ.

## CAMPANULA FAMILY.

†*Specularia perfoliata*, A. DC. VENUS'S LOOKING-GLASS.

End of May or first of June.

*Campanula Americana*, L. TALL BELLFLOWER.

High Island. Early in July.

## ERICACEÆ.

## HEATH FAMILY.

†*Gaylussacia dumosa*, Torr. & Gray. DWARF HUCKLEBERRY.

Terra Cotta Swamp, June 11, 1876, in flower; Agricultural College, Md. (Professor Chickering); rare.

†*Gaylussacia frondosa*, Torr. & Gray. BLUE TANGLE. DANGLEBERRY.

May; fruit in July.

†*Gaylussacia resinosa*, Torr. & Gray. BLACK HUCKLEBERRY.

Middle of May; fruit, last of June or in July.

*Vaccinium vacillans*, Solander. LOW BLUEBERRY.

Sterile plants often prostrate, with leaves more or less two-ranked. A thin-leaved form, growing in thickets and flowering with or after the leaves, occurs near the Reform School, and a form with brilliant pink buds and corolla, and with flowers wholly in advance of the leaves, is abundant on bare rocks at Great Falls. Last week in April or first of May; fruit, last of June.

†*Vaccinium stamineum*, L. DEERBERRY. SQUAW-HUCKLEBERRY.

Last half of May; fruit, middle of July.

†*Vaccinium corymbosum*, L. COMMON BLUEBERRY. SWAMP-BLUEBERRY.

Last half of April; fruit in July.

†*Epigaea repens*, L. TRAILING ARBUTUS.

Functionally dioecious, the male flowers larger than the female. [See *American Naturalist*, March, 1890, p. 198.] Middle of March to middle of April; fruit, last of May.

†*Gaultheria procumbens*, L. WINTERGREEN. CHECKERBERRY.

Ridge above Blagden's Mill; rare. First week in July; fruit persistent through the winter.

†*Andromeda Mariana*, L. STAGGER-BUSH.

Middle of May to middle of June.

†*Andromeda ligustrina*, Muhl. LYON'S ANDROMEDA.

Second to fourth week in June.

†*Leucothoe racemosa*, Gray.

The pedicels which nod in the flower become horizontal in the fruit on opposite sides of the rachis, rendering the raceme flat and distichous. Last of May or first of June.

†*Kalmia latifolia*, L. MOUNTAIN LAUREL. CALICO-BUSH.

First half of June.

*Kalmia angustifolia*, L. SHEEP-LAUREL. LAMBSKILL.

Found only in the northeast section. Last of May or first half of June.

†*Rhododendron viscosum*, Torr. [*Asalea viscosa*, L.]. CLAMMY AZALEA. WHITE SWAMP-HONEYSUCKLE.

June.

*Rhododendron viscosum*, Torr., var. *glaucum*, Gray. [*Asalea viscosa*, L., var. *glauca*, Gray.]

Terra Cotta Swamp; Agricultural College, Md. Last week in May; earlier than the preceding or the following.

*Rhododendron viscosum*, Torr., var. *nitidum*, Gray. [*Asalea viscosa*, L., var. *nitida*, Gray.] Terra Cotta Swamp; Bladensburg. June.

†*Rhododendron nudiflorum*, Torr. [*Asalea nudiflora*, L.]. PURPLE AZALEA. PINK-TER-FLOWER.

Second or third week in May.

†*Rhododendron maximum*, L. GREAT LAUREL. ROSE BAY.

First Ravine below Chain Bridge, Va. Last of June or first of July.

†*Chimaphila umbellata*, Nutt. PRINCE'S PINE. PIPSISSEWA.

Last week in June.

†*Chimaphila maculata*, Pursh. SPOTTED WINTERGREEN.

First week in July. One week later than the last.

*Pyrola secunda*, L.

Pine woods; not common. Middle of June.

*Pyrola chlorantha*, Swartz.

Pine woods; rather rare. Last of May or first of June.

*Pyrola elliptica*, Nutt. SHIN-LEAF.

Carroll Estate. Last week in June.

†*Pyrola rotundifolia*, L. ROUND-LEAVED PYROLA.

Last week in June.

†*Monotropa uniflora*, L. INDIAN PIPE. CORPSE-PLANT.

June to September.

†*Monotropa Hypopitys*, L. PINE-SAP. FALSE BEECH-DROPS.

July to October.

### PRIMULACEÆ.

#### PRIMROSE FAMILY.

†*Dodecatheon Meadia*, L. AMERICAN COWSLIP. SHOOTING-STAR.

Corcoran's Woods; Foundry Run. Second or third week in May.

†*Steironema ciliatum*, Raf. [*Lysimachia ciliata*, L.]. LOOSESTRIFE.

June.

*Steironema lanceolatum*, Gray. [*Lysimachia lanceolata*, Walt.].

Eastern Branch, above Benning's Bridge, between tides. Also intermediate forms leading to the next, above Sandy Landing. First week in July.

†*Steironema lanceolatum*, var. *hybridum*, Gray. (*ide* Gray). [*Lysimachia lanceolata*, Walt., var. *angustifolia* (not *hybrida*!), Gray.]

Great Falls, Va.; also above Sandy Landing, where transition forms connect it with the type. First week in July.

†*Steironema longifolium*, Gray. [*Lysimachia longifolia*, Pursh.]

Flats below Eads' Mill. Second to fourth week in July.

†*Lysimachia quadrifolia*, L. FOUR-LEAVED LOOSESTRIFE.

End of May or in June.

†*Lysimachia stricta*, Ait. LOOSESTRIFE.

Last week in June or first week in July.

*Lysimachia nummularia*, L. MONEYWORT.

Scarcely escaped. End of May.

†*Anagallis arvensis*, L. COMMON PIMPERNEL. POOR MAN'S WEATHER-GLASS.

On rocks under Chain Bridge. Only three specimens found. Also observed by Miss M. A. M'Makin, at Burke's Station, Fairfax Co., Va., from which place at her request specimens were sent me by Mrs. U. H. Herbert. July to September.

†*Samolus Valerandi*, L., var. *Americanus*, Gray. WATER PIMPERNEL. BROOK-WEED.

Chain Bridge (one specimen); mouth of Difficult Run. First half of July.

### EBENACEÆ.

#### EBONY FAMILY.

†*Diospyros Virginiana*, L. PERSIMMON.

As regards the fruit at least, there are two quite well-marked varieties, in one of which the fruit ripens nearly a month earlier, is reddish, especially within, and mealy, rendering it very pleasant. In the other later-maturing kind, the fruit, besides being larger, is not reddened or mealy, and is far less palatable. Last half of May; fruit, October and November.

**OLEACEÆ**

OLIVE FAMILY.

† *Fraxinus Americana*, L. WHITE ASH.

First of May; fruit in July.

† *Fraxinus pubescens*, Lam. RED ASH.

Last of April; fruit in July.

*Fraxinus viridis*, Michx. f. GREEN ASH.

April; fruit, June or July.

† *Chionanthus Virginica*, L. FRINGE-TREE.

Leaves fragrant in drying. Last half of May.

**APOCYNACEÆ**

DOGBANE FAMILY.

*Vinca minor*, L. PERIWINKLE. (Very improperly called *Myrtle*.)

Frequently with pure white flowers. Escaped in many places. Last of April or first of May.

† *Apocynum cannabinum*, L. DOGBANE. INDIAN HEMP.

Last half of June.

*Apocynum cannabinum*, L., var. *glaberrimum*, DC.

Flats at Little Falls. I retain De Candolle's variety name, though dropped by Professor Gray, because this form is here very well marked, the typical form being also common. July.

**ASCLEPIADACEÆ**

MILKWEED FAMILY.

† *Asclepias tuberosa*, L. BUTTERFLY-WEED. PLEURISY-ROOT.

July.

† *Asclepias rubra*, L.

Holmead and Terra Cotta Swamps; rare. Middle of July.

† *Asclepias purpurascens*, L. PURPLE MILKWEED.

Not common.

† *Asclepias incarnata*, L. SWAMP MILKWEED.

Last of July.

*Asclepias incarnata*, L., var. *pulchra*, Pers.

First of August.

† *Asclepias Cornuti*, Decane. COMMON MILKWEED. SILKWEED.

Last half of June.

† *Asclepias obtusifolia*, Michx.

June.

† *Asclepias variegata*, L. VARIEGATED MILKWEED.

Last of May to middle of June.

Bull. Nat. Mus. No. 22—7

† *Asclepias quadrifolia*, Jacq. FOUR-LEAVED MILKWEED.

Very handsome and should be cultivated if possible. Not common. Last of May.

† *Asclepias verticillata*, L. WHORLED MILKWEED.

Foliage very pretty and delicate. Deserves more attention from floriculturists. July.

† *Acerates viridiflora*, Ell. [*Gomphocarpus*, Benth. & Hook., Gen. Pl.] GREEN MILKWEED.

July.

† *Ensalenia albidia*, Nutt. ENSLEN'S VINE.

High Island; Mt. Vernon (Professor Chickering), where only it has been observed to fruit. Last half of July.

*Gonolobus obliquus*, R. Br. FALSE CHOKE-DOG.

Rock Creek; High Island. First half of June. A green-flowered variety of this species occurs on High Island along with the type.

† *Gonolobus hirsutus*, Michx.

Insane Asylum; Hunting Creek. First half of June.

## GENTIANACEÆ.

## GENTIAN FAMILY.

† *Sabbatia angularia*, Pursh. AMERICAN CENTAURY.

Last week in July or early in August. For certain peculiarities of this plant, see the *Gardener's Monthly* for September, 1878, p. 278, and the *American Entomologist* for April, 1880, p. 88.

† *Gentiana Saponaria*, L. SOAPWORT-GENTIAN.

September.

*Gentiana Andrewsii*, Griseb. CLOSED GENTIAN.

Not common. Last of September or first of October.

† *Gentiana ochroleuca*, Froel. YELLOWISH-WHITE GENTIAN.

September.

† *Bartonia tenella*, Muhl. SCREW-STEM.

Reform School. Last half of July.

† *Obolaria Virginica*, L. PENNYWORT.

March, April.

## POLEMONIACEÆ.

## POLEMONIUM FAMILY.

† *Phlox paniculata*, L.

Middle of July to middle of August.

† *Phlox maculata*, L. WILD SWEET-WILLIAM.

Falls Church (Professor Chickering); Reform School; Back Lick Run, Va.; not common. Second week in May.

† *Phlox pilosa*, L.

Herndon, Va., May 27, 1878 (Professor Chickering).

† *Phlox divaricata*, L.

April, May. Autumnal flowers, October 16, 1873.

†*Phlox subulata*, L. MOSS-PINK. GROUND-PINK.

Great Falls. April, May.

*Polemonium reptans*, L. CREEPING GREEK VALERIAN.

Rock Creek below Piney Branch; also found at Falls Church by Professor Chickering. First of May.

### HYDROPHYLLACEÆ.

#### WATERLEAF FAMILY.

†*Hydrophyllum Virginicum*, L. WATERLEAF.

Early leaves spotted. Last half of May.

†*Ellisia Nyctalea*, L.

Not common. May.

†*Phacelia Purshii*, Buckley.

Larkspur Island. Discovered May 23, 1877, by the Rev. Thomas Morong; Pimmit Run (Professor Chickering).

*Phacelia parviflora*, Pursh.

Pimmit Run. May.

### BORRAGINACEÆ.

#### BORAGE FAMILY.

†*Cynoglossum officinale*, L. COMMON HOUND'S-TONGUE.

Both white and pink flowered; not common. Last of May to middle of June.

†*Cynoglossum Virginicum*, L. WILD COMFREY.

Middle of May.

†*Bohiospermum Virginicum*, Lehm. [*Cynoglossum Morisoni*, DC.] BEGGAR'S LICE.

Middle of July. The large and very distinctive radical leaves not sufficiently observed, should be collected early in June.

†*Mertensia Virginica*, DC. VIRGINIAN COWSLIP. LUNGWORT.

April, May. Pure albinos common.

†*Myosotis palustris*, With. FORGET-ME-NOT.

May.

*Myosotis laxa*, Lehm. [*M. palustris*, With., var. *laxa*, Gray.]

May.

*Myosotis arvensis*, Hoffm. FIELD SCORPION-GRASS.

Last half of May.

*Myosotis verna*, Nutt. SPRING SCORPION-GRASS.

May.

†*Lithospermum arvense*, L. CORN GROMWEL.

April.

†*Lithospermum canescens*, Lehm. HOARY PUCCOON. ALKANET.

Near Langley. Only one specimen found, May 27, 1877.

† *Onosmodium Virginianum*, DC. FALSE GROMWELL.

Terra Cotta; Potomac Boat Club Landing; also near Bladensburg (Professor Chickering). Middle of June.

† *Echium vulgare*, L. VIKER'S BUGLOSS. BLUE THISTLE. BLUE-WEED.

First half of June. Autumnal flowers collected October 8, 1880.

### CONVOLVULACEÆ.

#### MORNING-GLORY FAMILY

† *Ipomoea coccinea*, L. [*Quamoclit coccinea*, Moench.]

Sparingly escaped from cultivation. September.

† *Ipomoea Nil*, Roth. SMALL MORNING-GLORY.

More common than the last. June to August.

*Ipomoea purpurea*, Lam. COMMON MORNING-GLORY.

Escaped in some places. September.

† *Ipomoea pandurata*, Meyer. MAN-OF-THE-EARTH. WILD POTATO-VINE.

Last of July or first of August.

*Ipomoea lacunosa*, L. WHITE-STAR IPOMOEA.

First half of September.

*Convolvulus spithameus*, L. [*Calystegia spithamea*, Pursh.] LOW BINDWEED.

Near Ivy City and in Virginia; not common. Last of May.

† *Convolvulus sepium*, L. [*Calystegia sepium*, R. Br.] HEDGE BINDWEED.

June to August.

† *Convolvulus arvensis*, L. BINDWEED.

Very rare. Formerly along the wall of the National Hospital for the Insane, but now destroyed; also in the Park between Third and Four-and-a-half streets. I transplanted a vine in my garden and it has bloomed freely two summers, but no capsules have formed. June.

*Cuscuta chlorocarpa*, Eng. DODDER.

Shores of the river on *Dianthera*, &c., forming beds. July, August.

*Cuscuta arvensis*, Beyrich.

July to September.

† *Cuscuta Gronovii*, Willd. COMMON AMERICAN DODDER.

September.

### SOLANACEÆ.

#### NIGHTSHADE FAMILY.

† *Solanum nigrum*, L. COMMON NIGHTSHADE.

June, July.

† *Solanum Carolinense*, L. HORSE-NETTLE.

June, July.

† *Physalis pubescens*, L. GROUND-CHERRY.

Rare. September, October.

† *Physalis viscosa*, L.

June.

† *Nicandra physaloides*, Gaertn. APPLE-OF-PERU.

Georgetown (Professor Chickering).

*Lycium vulgare*, Duval. MATRIMONY-VINE.

Canal in Georgetown; also, Bladensburg. End of May to November.

† *Datura Stramonium*, L. COMMON STRAMONIUM. JAMESTOWN-WEED ("JIMSON-WEED"). THORN-APPLE.

July to September.

*Datura Tutula*, L. PURPLE THORN-APPLE.

More abundant than the last and larger. July to September.

### SCROPHULARIACEÆ

#### FIGWORT FAMILY.

† *Verbascum Thapsus*, L. COMMON MULLEIN.

July or August.

† *Verbascum Blattaria*, L. MOTH-MULLEIN.

June, July.

† *Linaria Canadensis*, Dumont. WILD TOAD-FLAX.

In fields, not very common. Middle of May.

† *Linaria vulgaris*, Mill. TOAD-FLAX. BUTTER-AND-EGGS. RAMSTED.

May, June. Autumnal flowers observed November 1, 1881.

† *Linaria Elatine*, Mill.

National Deaf Mute College Grounds (Professor Chickering).

† *Scrophularia nodosa*, L. FIGWORT.

Not common. August.

† *Chelone glabra*, L. TURTLE-HEAD. SNAKE-HEAD. BALMONT.

August, September.

† *Pentstemon pubescens*, Solander. BEARD-TONGUE.

High Island; Great Falls. Middle to end of May.

† *Pentstemon lævigatus*, Solander. [*P. Digitalis*, Nutt.]

May.

† *Mimulus ringens*, L. MONKEY-FLOWER.

July.

† *Mimulus alatus*, Solander. WINGED MONKEY-FLOWER.

July, August.

*Herpestis nigrescens*, Benth.

Flats below Eads' Mill, July 18, 1880, in flower; also in the same place, September 12, 1880, in both flower and fruit; rare. Could not be found this year (1881).

† *Gratiola Virginiana*, L. HEDGE-HYSSOP.

May.



† *Gratiola pilosa*, Michx.

Not common. A slender, simple form, and a stout, branching form. July, August

† *Hysanthes gratioloides*, Benth. FALSE PIMPERNEL.

The sterile stamens consist of erect staminodia with much smaller upwardly curved hooks projecting from them on the outer side. July.

† *Micranthemum Nuttallii*, Gray.

Hunting Creek. September, October.

† *Veronica Virginica*, L. CULVER'S PHYSIC.

July, August.

*Veronica Americana*, Schwein. AMERICAN BROOKLIME.

Near Langley, Va. May 27, 1877.

† *Veronica scutellata*, L. MARSH SPEEDWELL.

Flats below Eads' Mill. July, August.

† *Veronica officinalis*, L. COMMON SPEEDWELL.

Last of May or first of June; autumnal flowers, October 28, 1873.

† *Veronica serpyllifolia*, L. THYME-LEAVED SPEEDWELL.

A form with large (15mm wide) leaves was found at the mouth of Difficult Run, growing in perpetual shade under the cliffs. First half of May.

† *Veronica peregrina*, L. NECKWEED. PURSLANE SPEEDWELL.

Last week in April or first of May.

† *Veronica arvensis*, L. CORN SPEEDWELL.

First week in May.

*Buchnera Americana*, L. BLUE-HEARTS.

Reform School. July to September.

† *Gerardia pedicularia*, L. FERN-LEAVED FALSE FOXGLOVE.

Last of August or in September.

† *Gerardia flava*, L. DOWNY FALSE FOXGLOVE.

Middle to end of July.

*Gerardia quercifolia*, Pursh.

Great Falls. Collected only on October 5, 1879; then too far advanced.

† *Gerardia purpurea*, L. PURPLE GERARDIA.

August, September.

† *Gerardia tenuifolia*, Vahl. SLENDER GERARDIA.

Last of August or first of September.

† *Pedicularis Canadensis*, L. WOOD-BETONY. LOUSEWORT.

April.

† *Pedicularis lanceolata*, Michx.

Hunting Creek. Last of September.

† *Melampyrum Americanum*, Michx. COW-WHEAT.

Carroll Estate. September.

**OROBANCHACEÆ.**

BROOM-RAPE FAMILY.

*Orobanche minor*, L. LESSER BROOM-RAPE.

Last of May or first of June.

† *Aphyllon uniflorum*, Gray. ONE-FLOWERED BROOM-RAPE.

Rare. End of May.

† *Conopholis Americana*, Wallroth. SQUAW-ROOT. CANCER-ROOT.

Last half of May.

† *Epiphegus Virginiana*, Bart. BEECH-DROPS.

Thickened base of the stem forming a large scaly corm, which when freshly cut open has the odor of potatoes. September.

**LENTIBULACEÆ.**

BLADDERWORT FAMILY.

† *Utricularia vulgaris*, L. GREATER BLADDERWORT.

Virginia, below Custis Spring (Dr. Foreman.)

† *Utricularia gibba*, L.

Flats above Eads' Mill. September.

**BIGNONIACEÆ.**

BIGNONIA FAMILY.

† *Tecoma radicans*, Juss. TRUMPET-FLOWER.

Last of June or in July.

† *Catalpa bignonioides*, Walt. INDIAN BEAN.

Probably not indigenous. Middle of June.

**ACANTHACEÆ.**

ACANTHUS FAMILY.

*Ruellia ciliosa*, Pursh. [*Dipteracanthus ciliatus*, Nees.] RUEL. LONG-TUBED RUELLIA.

Dry ground. First half of July.

*Ruellia ciliosa*, Pursh, var. *ambigua*, Gray.

In damp ground. Middle of July.

† *Ruellia strepens*, L. [*Dipteracanthus strepens*, Nees.] SHORT-TUBED RUELLIA.

Flats above the Outlet Lock. First half of June. A month earlier than the last.

† *Dianthera Americana*, L. WATER-WILLOW.

June.

**VERBENACEÆ.**

VERVAIN FAMILY.

† *Phryma leptostachya*, L. LOPSEED.

July.

†*Verbena officinalis*, L. EUROPEAN VERVAIN.

Georgetown. June.

†*Verbena urticifolia*, L. NETTLE-LEAVED VERVAIN. WHITE VERVAIN.

Usually more or less covered with a white mold which seems to be peculiar to this species. Last of July.

†*Verbena angustifolia*, Michx. NARROW-LEAVED VERVAIN.

June.

†*Verbena hastata*, L. BLUE VERVAIN.

July.

*Lippia lanceolata*, Michx. FOG-FRUIT.

July.

#### LABIATÆ

#### MINT FAMILY.

†*Trichostema dichotomum*, L. BLUE CURLS.

The pink-flowered variety also occurs here. September.

†*Isanthus cæruleus*, Michx. FALSE PENNYROYAL.

Flats above the Outlet Lock. August.

†*Teucrium Canadense*, L. AMERICAN GERMANDER. WOOD-SAGE.

First half of July.

†*Collinsonia Canadensis*, L. COLLINSON'S FLOWER. HORSE-BALM. RICH-WEED. STONE-ROOT.

Root a large corm-like tuber from which proceed long, slender fibres. First half of September.

*Perilla ocimoides*, L., var. *crispa* (Gray†). BEEFSTEAK PLANT.

Crystal Spring. Escaped. First half of September.

†*Mentha viridis*, L. SPEARMINT.

Last of July or first of August.

*Mentha piperita*, L. PEPPERMINT.

August, September.

†*Mentha Canadensis*, L. WILD MINT.

August.

†*Lycopus Virginicus*, L. BUGLE-WEED.

September.

†*Lycopus rubellus*, Moench. [*L. Europæus*, L., var. *integrifolius*, Gray.] WATER HOARHOUND. GIPSYWORT.

*Lycopus sinuatus*, Ell. [*L. Europæus*, L., var. *sinuatus*, Gray.]

July.

†*Cunila Mariana*, L. DITTANY.

September.

†*Pycnanthemum linifolium*, Pursh. MOUNTAIN MINT.

July.

- † *Pycnanthemum lanceolatum*, Pursh.  
Roach's Run, Va. Taste and smell of *Hedeoma*. August, September.
- † *Pycnanthemum muticum*, Pers.  
July, August.
- † *Pycnanthemum Torreyi*, Benth.  
Rock Creek opposite Crystal Spring; Bluffs below Chain Bridge, Va. July, August.
- Pycnanthemum olinopodioides*, Gray.  
July, August.
- † *Pycnanthemum incanum*, Michx.  
July, August.
- † *Calamintha Nepeta*, Link. BASIL-THYME.  
June to November.
- † *Calamintha Clinopodium*, Benth. BASIL.  
July to September.
- † *Melissa officinalis*, L. BALM.  
Brentwood. July.
- † *Hedeoma pulegioides*, Pers. AMERICAN PENNYROYAL.  
August.
- † *Salvia lyrata*, L. LYRE-LEAVED SAGE.  
May.
- † *Salvia urticifolia*, L. NETTLE-LEAVED SAGE.  
Last of May or first half of June.
- † *Monarda fistulosa*, L. WILD BERGAMOT.  
June, July.
- † *Monarda punctata*, L. HORSE-MINT.  
August.
- † *Lophanthus nepetoides*, Benth. GIANT HYSSOP.  
August.
- † *Nepeta Cataria*, L. CATNIP.  
July.
- † *Nepeta Glehoma*, Benth. GROUND IVY.  
April.
- † *Scutellaria lateriflora*, L. MAD-DOG SKULLCAP.  
Last half of July.
- Scutellaria saxatilis*, Riddell. ROCK SKULLCAP.  
Potomac Shore, Va., above the Potomac Boat Club Landing, in a dry gulch.  
Locality very circumscribed. Last week in July or first of August.
- † *Scutellaria serrata*, Andrews. SKULLCAP.  
Last of May or first of June.

†*Scutellaria pilosa*, Michx.

June.

†*Scutellaria integrifolia*, L.

June.

†*Scutellaria nervosa*, Pursh.

Insane Asylum. Last half of May.

†*Brunella vulgaris*, L. SELF-HEAL. HEAL-ALL.

June to August.

†*Physostegia Virginiana*, Benth. FALSE DRAGON-HEAD.

Rocks, Potomac shore. July, August.

†*Marrubium vulgare*, L. COMMON HOARHOUND.

June.

†*Leonurus Cardiaca*, L. COMMON MOTHERWORT.

June, July.

†*Lamium amplexicaule*, L. DEAD-NETTLE.

March, April.

***Stachys palustris*, L. HEDGE-NETTLE.**

Found only on June 26, 1874, in thickets of smilax between Fifteenth and Sixteenth streets, near Boundary, in swampy ground, now drained.

†*Stachys aspera*, Michx. [*S. palustris* L., var. *aspera*, Gray.]

The common form here. June.

**PLANTAGINACEÆ.****PLANTAIN FAMILY.*****Plantago cordata*, Lam.**

Sandy shore of the Potomac, opposite Alexandria. First found by Prof. J. H. Comstock, May 1, 1881; then in good condition. Roots large, white, divergently branching, and abruptly truncated at the end, from which truncated extremities, and from no other part, proceed bundles of long, white fibers.

†*Plantago major*, L. COMMON PLANTAIN.

June, July.

***Plantago Rugellii*, Decane.**

More common than the last. July.

†*Plantago lanceolata*, L. RIBGRASS. RIPLEGRASS. ENGLISH PLANTAIN.

A form with compound heads occurs, also a form with white stripes in the leaves. May.

***Plantago Patagonica*, Jacq., var. *aristata*, Gray.**

Vacant lot on B street S. W., between Eleventh and Twelfth streets (Dr. Vasey).

†*Plantago Virginica*, L.

Varying immensely in size; specimens found near Ivy City, May 8, 1878, being nearly half a meter in height. First half of May.

**AMARANTACEÆ**

**AMARANTH FAMILY.**

- Amarantus paniculatus*, L. RED AMARANTH.**  
Rare out of gardens. August, September.
- † ***Amarantus retroflexus*, L. GREEN AMARANTH. PIGWEED.**  
August, September.
- Amarantus albus*, L.**  
Alexandria; Not common. September.
- † ***Amarantus spinosus*, L. THORNY AMARANTH.**  
July, August.
- † ***Acnida cannabina*, L. WATER-HEMP.**  
Potomac shores, between tides; also on the Eastern Branch. August.

**CHENOPODIACEÆ**

**GOOSEFOOT FAMILY.**

- † ***Chenopodium album*, L. LAMB'S-QUARTERS. PIGWEED.**  
June, July.
- Chenopodium Boeckianum*, Moq. [*C. album*, L., var. *Boeckianum*, Gray.]**  
July.
- Chenopodium urbicum*, L.**  
Vacant lots in the city; rare. July, August.
- Chenopodium murale*, L.**  
Not common. September.
- Chenopodium Botrys*, L.**  
Waste places in the city; rare; not seen since 1874.
- Chenopodium ambrosioides*, L. MEXICAN TEA.**  
August, September.
- † ***Chenopodium ambrosioides*, L., var. *anthelminticum*, Gray. WORMSEED.**  
Too near the last. August, September.
- Atriplex patula*, L., var. *hastata*, Gray. ORACHE.**  
White Lot. August, September.
- ***Salsola Kali*, L. SALTWORT.**  
Alexandria (Dr. Vasey).

**PHYTOLACCACEÆ**

**POKEWEED FAMILY.**

- † ***Phytolacca decandra*, L. POKEWEED.**  
June.

**POLYGONACEÆ.****BUCKWHEAT FAMILY.****Polygonum orientale, L. PRINCE'S FEATHER.**

July.

†**Polygonum Pennsylvanicum, L.**

August.

**Polygonum incarnatum, Ell.**

July, August.

†**Polygonum Persicaria, L. LADY'S THUMB.**

June, July.

**Polygonum Hydropiper, L. COMMON SMARTWEED. WATER-PEPPER.**

August, September.

**Polygonum acre, H. B. K. WATER SMARTWEED.**

July.

†**Polygonum hydropiperoides, Michx. MILD WATER-PEPPER.**

Carberry Meadows. August.

**Polygonum amphibium, L. WATER PERSICARIA.**

Pond on the Carberry Meadows; rare. Only seen once, July 17, 1861.

**Polygonum amphibium, L., var. terrestre, Willd.**

Flats near the Outlet Lock. August.

†**Polygonum Virginianum, L.**

August.

†**Polygonum aviculare, L. KNOTGRASS. DOORWEED.**

June, July.

†**Polygonum erectum, L. [*P. aviculare, L., var. erectum, Roth.*]**

July.

†**Polygonum arifolium, L. HALBERD-LEAVED TEAR-THUMB.**

September.

†**Polygonum sagittatum, L. ARROW-LEAVED TEAR-THUMB.**

August, September.

†**Polygonum Convolvulus, L. BLACK BINDWEED.**

July to November.

**Polygonum dumetorum, L. CLIMBING FALSE BUCKWHEAT.**

August, September.

†**Polygonum dumetorum, L., var. scandens, Gray.****Fagopyrum esculentum, Moench. BUCKWHEAT.**

Occasionally found in the vicinity of fields. August.

**Rumex Britannica, L. PALE DOCK.**

May

***Rumex verticillatus*, L.**

Above Sandy Landing. June, July.

† ***Rumex crispus*, L. CURLED DOCK.**

June.

† ***Rumex obtusifolius*, L. BITTER DOCK.**

May to July.

***Rumex crispus* × *obtusifolius*, Gray, Manual, ed. 5, p. 421.**

This well-marked hybrid is this year abundant in the city reservation west of the Capitol, between Four-and-a-half and Sixth streets, where it may be easily compared with both the parent species. It may be roughly described as having the narrow leaves of *R. crispus*, though less wavy-margined, and the toothed valves of *R. obtusifolius*, this character being, however, less evident on the non-grain-bearing valves. The habit of the hybrid is quite distinct from either, being more symmetrical and less ugly. The tendency seen in *R. obtusifolius* to exhibit red midribs and speckles on the leaves is exaggerated in the hybrid.

† ***Rumex Acetosella*, L. FIELD SORREL. HORSE SORREL.**

Last half of May.

**PODOSTEMACEÆ.**

**RIVER-WEED FAMILY.**

***Podostemon oeratophyllus*, Michx. RIVER-WEED.**

Rock Creek, below Lyon's Dam; Difficult Run. June, July.

**ARISTOLOCHIACEÆ.**

**BIRTHWORT FAMILY.**

† ***Asarum Canadense*, L. WILD GINGER. ASARABACCA.**

Last of April or first of May.

† ***Aristolochia Serpentaria*, L. VIRGINIA SNAKE-ROOT.**

Widely distributed, but nowhere abundant. June.

**PIPERACEÆ.**

† ***Saururus cernuus*, L. LIZARD'S TAIL.**

July.

**LAURACEÆ.**

**LAUREL FAMILY.**

† ***Sassafras officinale*, Nees.**

April. For an attempt to explain the significance of the rudimentary organs of *Sassafras*, *Lindera*, and other Lauraceous plants, see my paper on "Homologies in the Lauraceæ," read before the A. A. A. S. at Saratoga, and published in the *Scientific American, Supplement*, of September 20, 1879, p. 3069.

† ***Lindera Benzoin*, Meisner. SPICE-BUSH. BENJAMIN-BUSH.**

March, April.

**THYMELACEÆ.**

**MEZEREUM FAMILY.**

***Dicra palustris*, L. LEATHER-WOOD. MOOSE-WOOD.**

Second or third week in April.



**SANTALACEÆ****SANDALWOOD FAMILY.**

† *Comandra umbellata*, Nutt. BASTARD TOAD-FLAX.

After flowering this plant throws out runners or prostrate shoots, the leaves on which are two-ranked and spreading. May, June.

**LORANTHACEÆ****MISTLETOE FAMILY.**

† *Phoradendron flavescens*, Nutt. AMERICAN MISTLETOE.

Growing here exclusively on *Nyssa multiflora*.

**EUPHORBIACEÆ****SPURGE FAMILY.**

† *Euphorbia maculata*, L. SPOTTED SPURGE.

July, August.

† *Euphorbia hypericifolia*, L. LARGER SPOTTED SPURGE.

July, August.

† *Euphorbia corollata*, L. FLOWERING SPURGE.

July, August.

† *Euphorbia Ipecacuanhæ*, L. WILD IPECAC.

Last week in April to end of May.

*Euphorbia dictyosperma*, Fischer & Meyer.

Agricultural College Station; High Island; Reservoir (Professor Chickering).  
Second week in May.

*Euphorbia commutata*, Eng.

High Island and above. April.

*Phyllanthus Carolinensis*, Walt.

Corcoran's Woods (Professor Chickering). Locality now apparently exhausted.

† *Acalypha Virginica*, L. THREE-SEEDED MERCURY.

July, August.

*Ricinus communis*, Desf. CASTOR-OIL BEAN. PALMA-CHRIST.

Waste places in the city. August.

**URTICACEÆ****NETTLE FAMILY.**

† *Ulmus fulva*, Michx. SLIPPERY ELM. RED ELM.

Last half of March.

† *Ulmus Americana*, L. WHITE ELM. AMERICAN ELM.

First week in April.

† *Celtis occidentalis*, L. HACKBERRY. SUGARBERRY.

Early part of May.

*Humulus Lupulus*, L. COMMON HOP.

Rock Creek, near the Adams Mill; rare. August.

*Cannabis sativa*, L. HEMP.

Waste lots in the city. August.

*Maclura coccinea*, Nutt. OSAGE-ORANGE. BOIS D'ARC.

Deserted hedges, growing thrifty and bearing fruit. End of May.

† *Morus rubra*, L. RED MULBERRY.

Middle of May; fruit ripe in June.

*Morus alba*, L. WHITE MULBERRY.

Roadside near Uniontown (Prof. J. H. Comstock), May 7, 1881.

† *Urtica dioica*, L. NETTLE.

July.

† *Laportea Canadensis*, Gandichand. WOOD-NETTLE.

July.

† *Pilea pumila*, Gray. RICHWEED. CLEARWEED.

August.

† *Boehmeria cylindrica*, Willd. FALSE NETTLE.

Two forms; a slender, narrow-leaved, and a shorter, broad-leaved one. July, August.

*Parietaria Pennsylvanica*, Muhl. PELLITORY.

Below the Insane Asylum. First week in June.

#### PLATANACEÆ.

##### PLANE-TREE FAMILY.

† *Platanus occidentalis*, L. AMERICAN PLANE-TREE. SYCAMORE. BUTTONWOOD.

First week in May.

#### JUGLANDACEÆ.

##### WALNUT FAMILY.

*Carya alba*, Nutt. SHELL-BARK HICKORY. SHAG-BARK HICKORY.

Rare, and perhaps only as intentionally planted. Middle of May; fruit, September or October.

*Carya microcarpa*, Nutt. SMALL-FRUITED HICKORY.

It is to be hoped that this may be ultimately retained as distinct from *C. alba*. The differences in this locality are immense. First week in May; fruit in October.

† *Carya tomentosa*, Nutt. MOCKER-NUT. WHITE-HEART HICKORY.

Second or third week in May; fruit, October or November.

† *Carya porcina*, Nutt. PIG-NUT. BROOM HICKORY. BROWN HICKORY.

First week in May; fruit, October.

†*Quercus Michauxii*, Nutt. MICHAUX'S OAK.

There is little doubt that this species occurs here, though it has not yet been clearly distinguished. Forms of the preceding with leaves nearly destitute of white color underneath are common and have been referred to it by Dr. Engelmann, though not typical. At Great Falls, on the Virginia side, are trees appearing to be normal, but neither fruit nor flowers have yet been collected. At Hampton, Va., I saw it well defined. It has the obovate, sinuate leaves, regular in outline but not lobed, of the upland form of *Q. Prinus*, and the smooth, light-colored bark of *Q. bicolor*.

†*Quercus Prinus*, L. CHESTNUT-OAK. ROCK CHESTNUT-OAK.

Two forms; an upland typical form, and a narrow leaved form growing on rocks near the river. First week in May; fruit, first of September, early dropping.

*Quercus Muhlenbergii*, Eng. [*Quercus Prinus*, L., var. *acuminata*, Michx.] YELLOW CHESTNUT-OAK.

A few trees along Rock Creek, near the mouth of Broad Branch; also a tree discovered by Dr. Vasey, near the District line, above Chain Bridge. This bears fruit, which, however, tends to abort and produce monstrosities. Some of the leaves also have nearly the form of *Q. Prinus*, and I strongly suspect it to be a hybrid. Last of April or first of May; fruit, September.

*Quercus prinoides*, Willd. DWARF CHESTNUT-OAK. CHINQUAPIN-OAK.

Reform School. Second week in May; fruit, September.

*Quercus rubra*, L. RED OAK.

First week in May; fruit, October.

†*Quercus coccinea*, Wang. SCARLET OAK.

First week in May; fruit, last of September or first of October.

†*Quercus tinctoria*, Bartram. [*Q. coccinea*, Wang., var. *tinctoria*, Gray.] BLACK OAK. YELLOW-BARKED OAK. QUERCITRON.

Following Sargent, I prefer to restore the time-honored name of Bartram for this species. Last week in April; fruit, first of October.

†*Quercus falcata*, Michx. SPANISH OAK. TURKEY-OAK.

Last of April or first of May; fruit, first of October.

*Quercus ilicifolia*, Wang. BEAR-OAK. BLACK SCRUB-OAK.

The claims of this species to a place in this catalogue are rather slender. A few specimens of the leaves, unaccompanied by acorns, were brought from the vicinity of Cabin John Run by Major Nutt of the Treasury Department in 1855, who sent them to Dr. E. Foreman, by whom they were deposited in the herbarium of the Department of Agriculture, where they may still be seen. Mr. Wm. Palmer is said to have collected it within a few years, also without fruit, in the vicinity of Falls Church, but his specimens have been sent away and are not accessible. It is to be hoped that it will now be re-discovered.

†*Quercus palustris*, Du Roi. SWAMP SPANISH OAK. PIN-OAK.

Second week in May; fruit, first of October.

†*Quercus nigra*, L. BLACK-JACK. BARREN OAK.

First of May; fruit, last of September.

*Quercus imbricaria*, Michx. SHINGLE-OAK. LAUREL-OAK.

Trees sometimes large, but dwarf form 2<sup>m</sup> to 6<sup>m</sup> high is common. First week in May; fruit, first of October.

Bull. Nat. Mus. No. 22—8

† *Quercus Phellos*, L. WILLOW-OAK.

Second week in May; fruit, first of October.

*Quercus Leana*, Nutt. LEA'S OAK.

Carroll Estate. [See *Field and Forest*, October and November, 1875, p. 39; also, *Botanical Gazette*, October, 1880, p. 123.] First week in May; fruit, last half of September.

*Quercus heterophylla*, Michx. BARTRAM'S OAK.

A number of young trees not bearing fruit, but having leaves closely resembling those of the authentic specimens, have been found. Near Fort Bennett, Va. (Dr. Foreman); High Island (this tree was quite large, and would probably have soon borne fruit, but it was unfortunately girdled); Terra Cotta Swamp (this specimen is now under close surveillance).

† *Castanea pumila*, Mill. CHINQUAPIN.

Second week in June; fruit, October.

† *Castanea vulgaris*, Lam., var. *Americana*, A. DC. CHESTNUT.

First half of June; fruit, October.

† *Fagus ferruginea*, Ait. BEECH.

Last of April; fruit, July.

## SALICACEÆ

## WILLOW FAMILY.

*Salix nigra*, Marshall. BLACK WILLOW.

First week in May.

*Salix nigra*, Marshall, var. *falcata*, Carey.

Eastern Branch.

*Salix nigra*, Marshall, var. *Wardii*, Bebb. n. v.

A remarkable form, with the broad leaves much whitened underneath, larger stipules, &c., approaching in appearance *S. cordata*, with which it grows. This peculiar willow has interested me for many years, as I was unable to harmonize its characters with any description or to find its exact counterpart in any collection. Still it was not until the spring of 1880 that I made any special effort to solve the difficulty. I then sent it to Professor Gray, who simply remarked upon it that the ovaries were those of *S. nigra*. I subsequently sent specimens to Mr. M. S. Bebb, who became at once greatly interested in the form. Upon learning that it grew with both *S. nigra* and *S. cordata*, he was at first inclined, as I was also myself, to regard it as a hybrid resulting from the intercrossing of these two species. At his suggestion I have since made the most thorough examination of the plant and the conditions under which it is found, the result of which has greatly weakened the force of this theory, and, judging from Mr. Bebb's careful description, which is appended, he is also less convinced of the cross than formerly.

The plant was first met with among the rocks on the river bottom adjacent to the Chain Bridge and Little Falls, where it predominates over other forms, though *S. nigra* is quite common there, and pistillate plants of *S. cordata* occur somewhat sparingly, in which, in the absence of staminate plants, the ovaries rarely perfect. *S. myricoides*, which is regarded as a cross between *S. sericea* and *S. cordata*, is also present in both sexes, and here too *S. longifolia* is found. But in addition to this locality, I have observed this variety of *S. nigra* as far up the river as Great Falls

and as far below as a point opposite Alexandria, though in neither of these places did it predominate over other forms.

The fact, however, which most influenced my judgment with regard to its hybridity was the respective dates of flowering of *S. nigra* and *S. cordata*. When the latter was fully out in the second week of April, I could see no buds on the former, and when the anthers of *S. nigra* were ready to shed their pollen on the first of May, the pods of *S. cordata*, though empty, were fully developed. The latter bears its flowers before the leaves, the former after, and an interval of three weeks separates the flowering time of the two species. These remarks are not intended as an argument, for it would be arguing without an opponent and against a theory first entertained by myself, but are merely meant to bring out the relations between the forms as my own observations have revealed them to me. In a highly interesting correspondence with Mr. Bebb on this subject, I have expressed my conviction that the form has resulted from the normal process of variation from environing influences, and that the co-existence of the variety with the type (*S. nigra*) is an expression, often observed by me in the case of other plants, of the law which has long been formulated by biologists, that variation goes on most rapidly between forms growing in the closest proximity to each other.

The following is Mr. Bebb's description, which certainly throws all the light upon the subject that is possible in the present state of the investigation:

"*S. NIGRA*, Marsh., var. *WARDI*. Leaves exceedingly variable in outline, the larger lanceolate, roundish at base, obliquely taper-pointed, 4' to 8' or even 7' long by 1' to 1½' wide, the smaller linear-lanceolate, scarcely ¼' wide, attenuate-cuspidate, more or less falcate, closely or sometimes slightly and unevenly serrulate, smooth, green above, conspicuously glaucous and veined beneath; petioles short, scarcely exceeding the large, reniform, obtuse, persistent stipules; aments terminating lateral branches (the growth of which is continued from the axil of the uppermost leaf), the staminate usually very long, 3'-4', subflexuose, the orange-yellow flowers rather remotely and subverticillately arranged on the slender rachis, scales ovate, obtuse, pale, smooth outside, villous on the inner surface, stamens mostly 3, intricately villous at base, mature fertile ament 3'-4' long by ¼' wide, lax, spreading, rachis angular, thinly villous, scales narrower, smoother and caducous; capsules quite large, globose-conical, glabrous (under a lens minutely granular); pedicels 4-5 times the length of the nectary; style very short or obsolete; stigmas small, notched.

"Staminate aments as in typical *nigra*; lax, fruiting aments as in *amygdaloides*; leaves varying in outline *pari passu* with *nigra* but glaucous beneath like *amygdaloides*. A peculiar form with leaves proportionately shorter and broader, more remotely serrate and prominently reticulate-veined beneath, might be easily mistaken (in the absence of aments) for an extravagant growth of *S. cordata*.

"At first glance our variety *Wardi* would seem to be a geographical equivalent of the more northern and western *S. amygdaloides*, from which, however, it differs in the shortly petioled leaves and large persistent stipules—not to mention less tangible characters—and therefore, without venturing to express any positive opinion in the absence of reliable data, I am inclined to believe rather that it will be found to connect down the coast with sub. sp. *S. longipes* of Florida, which in turn passes into the yet more southern *S. occidentalis*, Boec.

"The continued growth of the branchlets bearing the aments, though more or less noticeable in other forms of *nigra*, is here developed in a remarkable degree. Thus, before even the staminate aments are fully expanded, not infrequently they are made to appear as if sessile, and opposite a leaf, on the vigorous, growing branches, while a little later in the season the dry persistent rachis of the fruiting ament is found still clinging to the base of branches a foot or more in length."

Last half of May.

*Salix fragilis* X *alba*, Wimmer. [*S. fragilis*, L., var. *Russelliana*, Gray, Manual; *S. Russelliana*, Smith.]

Eastern Branch Marsh, above Benning's Bridge; also, near the Outlet Lock.

***Salix alba*, L. WHITE WILLOW.**

Last of April or first of May.

**† *Salix alba*, L., var. *vitellina*, Koch.**

Last of April or first of May.

***Salix Babylonica*, L. WEEPING WILLOW.**

April.

***Salix longifolia*, Muhl. LONG-LEAVED WILLOW.**

Flats near Chain Bridge.

**† *Salix humilis*, Marshall. PRAIRIE WILLOW.**

Middle of April.

***Salix tristis*, Ait. DWARF GRAY WILLOW.**

Last half of March to middle of April.

***Salix sericea*, Marshall. SILKY WILLOW,**

April.

**† *Salix cordata*, Muhl. HEART-LEAVED WILLOW.**

Eastern Branch Marsh and generally along the Potomac; plants nearly all pistillate, often not fertile, but hybridizing freely with *S. sericea*. The only staminate plant thus far found was nearly opposite Alexandria.

Second or third week in April.

***Salix cordata* × *sericea*, Bebb. [*S. myricoides*, Muhl! *S. cordata*, var. *myricoides*, Darl. *Flora Cestrica*, ed. 3, p. 278, not of Carey, Andersson, and others.]**

Piney Branch.

***Salix purpurea*, L. PURPLE WILLOW.**

Eastern Branch Marsh; planted to protect drainage embankments. Staminate plants only seen. Second week in April.

***Populus grandidentata*, Michx. LARGE-TOOTHED ASPEN.**

Terra Cotta. Male trees only; doubtless originally planted; spreading considerably by subterranean rootstocks. Fully out March 21, 1880.

***Populus monilifera*, Ait. COTTONWOOD. NECKLACE POPLAR.**

Only three mature trees of this species are known within our limits. Of these one is male and two are females. One of the female trees, however, is quite small and has been pushed down by the ice until it is nearly horizontal, but is alive and apparently thrifty. The other two are large, fine trees. The male tree is located near the river, at the water's edge, opposite the third lock, a mile above High Island. The large female tree stands at the southern end of High Island. The small female tree is between this and the canal, and is doubtless the offspring of the other two. There is one other smaller offshoot, standing a short distance from the large female tree, and many more such saplings (swept away several years ago by ice and floods) once grew on the flats in the vicinity of Chain Bridge, probably of the same parentage. The peculiarity, however, which justifies this note is, that while the branches of the male tree are not at all angled and those of the large female are only slightly, yet manifestly so, those of the small female and of all the other young specimens observed are so to a remarkable degree. Unless there be some other means of accounting for the origin of these young trees than that above pointed out, the case must be regarded as affording a demonstration of the identity of this species with the

† Aiton. April.

*Populus balsamifera*, L., var. *candicans*, Gray. BALM OF GILEAD.  
Last half of April.

*Populus dilatata*, Ait. LOMBARDY POPLAR.  
Potomac City, along the Eastern Branch.

*Populus alba*, L. ABLE. WHITE POPLAR.  
Tending to spread and form groves. There are two forms in the city, one of which has small leaves which are scarcely at all whitened underneath. These are all male trees. February or March.

### CERATOPHYLLACEÆ

#### HORNWORT FAMILY.

*Ceratophyllum demersum*, L. HORNWORT.  
Abundant in the Potomac. July.

## MONOCOTYLEDONS.

### ARACEÆ.

#### ARUM FAMILY.

† *Arisæma triphyllum*, Torr. INDIAN TURNIP.  
April; fruit, July.

† *Arisæma Dracontium*, Schott. GREEN DRAGON-ROOT.  
High Island; Carroll Estate. May; fruit, August.

† *Peltandra Virginica*, Raf. ARROW ARUM.  
Leaves sometimes reduced to a simple elliptical blade. July.

† *Symplocarpus foetidus*, Salisb. SKUNK CABBAGE.  
February, March.

† *Orontium aquaticum*, L. GOLDEN CLUB.  
May, June.

† *Acorus Calamus*, L. SWEET FLAG. CALAMUS.  
June.

### LEMNACEÆ.

#### DUCK-WEED FAMILY.

*Lemna polyrrhisa*, L. DUCKWEED. DUCK'S-WEED.

### TYPHACEÆ.

#### CAT-TAIL FAMILY.

† *Typha latifolia*, L. COMMON CAT-TAIL. REED-MADE.  
June.

† *Typha angustifolia*, L. SMALL CAT-TAIL. NARROW-LEAVED CAT-TAIL.  
Last week in May.

† *Sparganium eurycarpum*, Eng. BUR-REED.  
July.

†*Sparganium simplex*, Hudson, var. *androcladum*, Gray.  
July.

### NAIADACEÆ.

#### PONDWEED FAMILY.

*Najas flexilis*, Rostk. NAIAD.

No flowers or fruit yet found on this plant.

*Potamogeton natans* L. PONDWEED.

Eastern Branch. Fruit, July.

*Potamogeton Claytonii*, Tuckerm.

Difficult Run. Fruit, July.

*Potamogeton hybridus*, Michx.

Ponds near the canal, below Great Falls. Fruit, July.

*Potamogeton lonchites*, Tuckerm.

Flowers in August; fruit not collected.

*Potamogeton lucens*, L.

Seen in the Potomac as late as October, but always without spikes and wholly submersed.

†*Potamogeton perfoliatus*, L.

Potomac. Fruit, July 2, 1876.

*Potamogeton pauciflorus*, Pursh.

Pools among rocks at Little Falls. Fruit, July 13, 1879.

*Potamogeton pectinatus*, L.

Common in the Potomac, but as far as yet observed without flowers or fruit.

### ALISMACEÆ.

#### WATER-PLANTAIN FAMILY.

†*Alisma Plantago*, L., var. *Americanum*, Gray. WATER-PLANTAIN.

Under certain circumstances this plant presents floating leaves with long petioles and elliptical blades like the *Potamogetons*. July; floating leaves in April or May.

†*Sagittaria variabilis*, Eng. ARROW-HEAD.

July to September.

*Sagittaria variabilis*, Eng., var. *angustifolia*, Gray.

Flats below Eads' Mill. A complete series may be collected in which the leaves vary in form from linear to ovate. September.

†*Sagittaria heterophylla*, Pursh.

First found under the Aqueduct in Foundry Run, but this locality is now destroyed; since found on the Carberry Meadows. July to September.

†*Sagittaria pusilla*, Nutt.

In the Potomac below Annapostan Island, on muddy bars between tides. July, August; fruit, last of September.



**HYDROCHARIDACEÆ.**

## FROG'S-BIT FAMILY.

**Anacharis Canadensis**, Planchon. WATER-WEED.  
June.

† **Vallisneria spiralis**, L. TAPE-GRASS. EEL-GRASS.  
July.

**ORCHIDACEÆ.**

## ORCHIS FAMILY.

† **Oreohis spectabilis**, L. SHOWY ORCHIS.  
May.

† **Habenaria tridentata**, Hook. REIN-ORCHIS.  
August.

**Habenaria virescens**, Spreng. GREEN REIN-ORCHIS.  
Hunting Creek; Eastern Branch Marsh; rare. Third week in June.

† **Habenaria ciliaris**, R. Br. YELLOW FRINGED ORCHIS.  
A single specimen found July 21, 1878, by Prof. M. H. Doolittle, near the Reform School. Not since seen.

† **Habenaria lacera**, R. Br. RAGGED FRINGED ORCHIS.  
Very rare; found July 3, 1874, near Boundary and Sixteenth streets, July 12, 1879, in the Terra Cotta region, and June 22, 1881, in Cercoran's Woods; a single specimen in each case, the last in good condition.

† **Goodyera pubescens**, R. Br. RATTLESNAKE-PLANTAIN.  
June or July.

**Spiranthes latifolia**, Torr. BROAD-LEAVED LADIES' TRACES.  
A single specimen found May 12, 1878, on the flats below Chain Bridge.

† **Spiranthes cernua**, Richard. DROOPING-FLOWERED LADIES' TRACES.  
Last of September.

† **Spiranthes graminea**, Lindl., var. **Walteri**, Gray. GRASS-LEAVED LADIES' TRACES.  
September.

**Spiranthes gracilis**, Bigelow. SLENDER LADIES' TRACES.  
Spikes apparently always twisted in the direction of a right-handed screw. Root leaves usually gone at flowering time, but found still present with the flowers July 4, 1879, at Great Falls. July to September.

**Spiranthes simplex**, Gray.  
Spikes sometimes twisted to the right and sometimes to the left. Pine woods near Bladensburg; rather rare. September.

† **Pogonia ophioglossoides**, Nutt. SNAKE-MOUTH.  
A form having leaves 4<sup>cm</sup> wide was found in the Holmead Swamp, June 13, 1880. First half of June.

† **Pogonia verticillata**, Nutt. WHORLED SNAKE-MOUTH.  
Third or fourth week in May.

† *Calopogon pulchellus*, R. Br. GRASS PINK.

Holmead Swamp. Middle of June.

*Tipularia discolor*, Nutt. CRANE-FLY ORCHIS.

Last week in August; leaves best collected in February or March.

† *Microstylis ophioglossoides*, Nutt. ADDER'S-MOUTH.

Carroll Estate, very rare. Only collected in fruit in September and October. Probably flowers in July.

† *Liparis Hiltifolia*, Richard. TWAYBLADE.

Last of May.

*Liparis Loeselii*, Richard. GREEN TWAYBLADE.

Woodley. Found in small quantities in 1877 by Mr. M. B. W. Hough; now apparently obliterated. First week in June.

† *Corallorhiza odontorhiza*, Nutt. CORAL-ROOT.

First of October.

*Corallorhiza multiflora*, Nutt.

Carroll Estate, rare; only once found, in fruit, October 18, 1874.

† *Aplectrum hyemale*, Nutt. PUTTY-ROOT. ADAM-AND-EVE.

First half of June; leaves best in March.

† *Cypripedium parviflorum*, Salisb. SMALL YELLOW MOCCASIN FLOWER or LADY'S SLIPPER.

Three miles above Langley, Va., near the Potomac, in a ravine called Dead Run (Dr. G. W. Hill, May 15, 1881). Intermediate forms connecting this with the next have been met with in Woodley Park, also at Broadwater.

† *Cypripedium pubescens*, Willd. LARGE YELLOW MOCCASIN FLOWER or LADY'S SLIPPER.

Woodley; Corcoran's Woods. Not common. May.

† *Cypripedium acaule*, Ait. STEMLESS MOCCASIN FLOWER or LADY'S SLIPPER.

First half of May.

#### AMARYLLIDACEÆ.

##### AMARYLLIS FAMILY.

† *Hypoxys erecta*, L. STAR-GRASS.

Said to fruit sparingly, but my specimens generally show well-developed capsules and seeds. June.

#### HÆMODORACEÆ.

##### BLOODWORT FAMILY.

† *Aletris farinosa*, L. COLIC-ROOT.

Abundant at Falls Church (Professor Chickering); Reform School (rare). May, June.

#### IRIDACEÆ.

##### IRIS FAMILY.

*Iris versicolor*, L. BLUE FLAG.

May.

*Iris verna*, L. SPRING IRIS. DWARF IRIS.

Near Bladensburg. First half of May.

†*Iris cristata*, Ait. CRESTED DWARF IRIS. LADIES' CALAMAS.

Spout Run, Va., near the "Three Sisters"; High Island. Second week in May.

*Pardanthus Chinensis*, Ker. BLACKBERRY-LILY.

July; fruit, October.

†*Sisyrinchium aniceps*, L. (See Proc. Am. Acad., vol. xxii, p. 277.) BLUE-EYED GRASS.

April, May.

†*Sisyrinchium mucronatum*, Michx. (See Proc. Am. Acad., vol. xxii, p. 277.)

First of May.

#### DIOSCOREACEÆ

##### YAM FAMILY.

†*Dioscorea villosa*, L. WILD YAM-ROOT.

First half of May.

#### SMILACEÆ

##### SMILAX FAMILY.

†*Smilax rotundifolia*, L. GREENBRIER. CATBRIER.

First half of May.

†*Smilax glauca*, Walt.

Middle of May.

*Smilax hispida*, Muhl.

Last of May or first of June.

†*Smilax Pseudo-China*, L.

Many large vines appear to be wholly without flowers or fruit. Large tubers as light as cork with long, black roots projecting from them, curiously suggestive of huge spiders, were found along the Sligo Creek, washed out of the banks where the vines grow. Last week in May; fruit in July.

†*Smilax herbacea*, L. CARRION-FLOWER.

Last half of May.

*Smilax tamnifolia*, Michx.

May.

#### LILIACEÆ

##### LILY FAMILY.

*Allium tricoccum*, Ait. LEEK.

High Islands, and islands above. First of July; fruit, September.

*Allium cernuum*, Roth. WILD ONION.

In the bud and early flower, the whole upper part of the stem droops; as the plant matures this curvature is gradually converted into a short turn at the summit, or proper nodding. First of July.

*Allium Canadense*, Kalm. WILD GARLIC.

June.

†*Allium vineale*, L. FIELD GARLIC.

June, July.

†*Polygonatum biflorum*, Ell. SMALLER SOLOMON'S SEAL.

Middle of May.

*Polygonatum giganteum*, Dietrich. GREAT SOLOMON'S SEAL.

Middle of May.

†*Smilacina racemosa*, Desf. FALSE SPIKENARD.

Last half of May.

†*Smilacina stellata*, Desf.

Found on High Island May 17, 1874, in flower; not seen there since. Mouth of Difficult Run, July 5, 1879, in fruit. Of the many plants seen at this last date, one berry, and only one, was found on each plant; no others appeared to have matured.

†*Maianthemum Canadense*, Desf. (See Proc. Am. Acad., vol. xiv, p. 346.) [*Smilacina bifolia*, Ker., var. *Canadense*, Gray.]

Carroll Estate; rare. Said to have been formerly found on Piney Branch. Middle of May.

*Asparagus officinalis*, L.

Escaped from cultivation. June.

†*Lilium superbum*, L. TURK'S-CAP LILY.

Last week in July.

†*Erythronium Americanum*, Smith. YELLOW ADDER'S TONGUE.

First half of April.

*Erythronium albidum*, Nutt. WHITE DOG'S-TOOTH VIOLET.

High Island and above. First half of April.

†*Uvularia perfoliata*, L. BELLWORT.

First week in May.

†*Oakesia sessilifolia*, Watson. Proc. Am. Acad., vol. xiv, p. 269. [*Uvularia sessilifolia*, L.] SESSILE-LEAVED BELLWORT.

Last of April or first of May.

†*Medeola Virginica*, L. INDIAN CUCUMBER.

Upper, and sometimes lower whorl of leaves colored brilliant crimson at fruiting-time (to attract birds?). Last of May; fruit, end of September.

*Trillium sessile*, L. THREE-LEAVED NIGHTSHADE.

High Island and above. April; fruit in July.

†*Melanthium Virginicum*, L. BUNCH-FLOWER. BLACK FLOWER.

Reform School; Woodley Park. Third week in July.

†*Veratrum viride*, Ait. AMERICAN WHITE HELLEBORE.

Rock Creek; Falls Church. Not common. Third week in May.

†*Stenanthium robustum*, Watson. Proc. Am. Acad., vol. xiv, p. 278.

Near Bladensburg, July 20, 1879.

†*Chamaelirium Carolinianum*, Willd. [*C. luteum*, Gray.] DEVIL'S-BIT. BLASTING STAR.

Many of the plants sterile, having rosettes of leaves only; these persist throughout the winter unless very severe. End of May.

**Tofieldia pubens**, Pers. FALSE ASPHODEL.

Dr. Foreman reports having found this plant many years ago in the Holmead Swamp. Though apparently no longer there, it may be looked for in similar situations.

**Ornithogalum umbellatum**, L. STAR-OF-BETHLEHEM.

Last week in May.

**Muscari botryoides**, Mill. GRAPE-HYACINTH.

Falls Church Road. End of April.

**Hemerocallis fulva**, L. DAY-LILY.

Last of June or first of July.

### JUNCACEÆ

#### RUSH FAMILY.

† **Luzula campestris**, DC. WOOD-RUSH.

March.

† **Juncus effusus**, L. COMMON RUSH. SOFT RUSH.

June.

**Juncus tenuis**, Willd. GRASS-LEAVED RUSH.

June.

**Juncus tenuis**, Willd., var. *secundus*, Eng.

June.

**Juncus dichotomus**, Ell.

Last of May.

**Juncus Gerardi**, Loise.

Alexandria, Va. (Dr. Vasey).

**Juncus bufonius**, L.

Insane Asylum. Last of May or first of June.

† **Juncus marginatus**, Rostk.

July, August.

**Juncus marginatus**, Rostk., var. *vulgaris*, Eng.

June, July.

**Juncus marginatus**, Rostk., var. *biflorus*, Eng.

A slender form, 30<sup>cm</sup> high, occurs; also the large form. June, July.

**Juncus acuminatus**, Michx., var. *legitimus*, Eng. [*J. pallascens*, L.] KNOTTY-LEAVED RUSH.

Strongly proliferous. June, July.

**Juncus scirpoides**, Lam., var. *macrostemon*, Eng.

August.

**Juncus nodosus**, L., var. *megacephalus*, Eng.

Flats above the Outlet Lock. August.

*Juncus Canadensis*, Gay, var. *subcaudatus*, Eng.  
October.

*Juncus Canadensis*, Gay, var. *longicaudatus*, Eng.  
August to October.

#### PONTEDERIACEÆ.

##### PICKEREL-WEED FAMILY.

† *Pontederia cordata*, L. PICKEREL-WEED.  
June to August.

† *Heteranthera reniformis*, Ruiz & Pav. MUD-PLANTAIN.  
August, September.

† *Schollera graminea*, Willd. WATER STAR-GRASS. YELLOW-EYED WATER-GRASS.  
July.

#### COMMELYNACEÆ.

##### SPIDERWORT FAMILY.

*Commelina erecta*, L. DAY-FLOWER.  
September.

† *Commelina Virginica*, L. COMMON DAY-FLOWER.  
High Island. July.

† *Tradescantia Virginica*, L. SPIDERWORT.  
First half of May.

#### XYRIDACEÆ.

##### YELLOW-EYED GRASS FAMILY.

*Xyris flexuosa*, Muhl. YELLOW-EYED GRASS. YELLOW FLOWERING RUSH.  
Railroad cutting near the Reform School (Professor Chickering); Holmead Swamp. Last half of July.

#### ERIOCAULONACEÆ.

##### PIPEWORT FAMILY.

*Eriocaulon decangulare*, L. PIPEWORT.

This plant has been erroneously distributed by me under the name of *E. gnaphalodes*, Michx. July.

#### CYPERACEÆ.

##### SEDGE FAMILY.

*Cyperus diandrus*, Torr. GALINGALE. CYPRUS GRASS.  
August, September.

*Cyperus diandrus*, var. *castaneus*, Torr.  
September.

*Cyperus Nuttallii*, Torr.

Achenia ash-colored and pitted. Telegraph Road near Bladensburg, October 13, 1878.

**Cyperus erythrorhizos**, Muhl.

Custis Spring, September 29, 1878.

**Cyperus virens**, Michx.

Flats below Eads' Mill. First half of August.

**Cyperus phymatodes**, Muhl.

This species invades the city and springs up in lawns, parks, &c., where the ground is somewhat moist. July to September.

† **Cyperus strigosus**, L.

Common. A depauperate form with very short (4<sup>mm</sup>), one to few flowered spikes probably belongs to this species. August, September.

**Cyperus Michauxianus**, Schultes.

Custis Spring. September 29, 1878.

† **Cyperus filiculmis**, Vahl.

June to August.

**Cyperus Lancasteriensis**, Porter.

Well defined forms of this species occur, but also several aberrant forms, apparently connecting it with *C. retrofractus*. July to September.

† **Cyperus ovularis**, Torr. HEDGE-HOG CLUB-RUSH.

July to September.

† **Cyperus retrofractus**, Torr.

Varies greatly in the length and size of the spikes, and perhaps the large-spiked forms should all be referred to *C. Lancasteriensis*. July to September.

† **Dulichium spathaceum**, Pers.

Last half of July.

† **Puirena squarrosa**, Michx. UMBRELLA-GRASS.

Holmead Swamp. July, August.

† **Eleocharis quadrangulata**, R. Br. SPIKE-RUSH.

Eastern Branch opposite the Race Course. July, August.

† **Eleocharis obtusa**, Schultes.

Spikes variable in size. May to July.

**Eleocharis palustris**, R. Br.

May.

**Eleocharis compressa**, Sulliv.

Little Falls; Great Falls; in damp, rocky places. The descriptions of this species in the fourth and fifth editions of Gray's Manual differ in some essential respects, and our plant agrees better with the former. The achenium is triangular-obovate and conspicuously pitted with oblong depressions longitudinally arranged. Stigmas often 3. It seems to be intermediate between *E. compressa* and *E. rostellata*. Middle to end of May.

† **Eleocharis tenuis**, Schultes.

First half of May.

**Eleocharis acicularis**, R. Br.

Bottom of dried ponds. June, July.

†*Scirpus planifolius*, Muhl.

Kalorama Heights, also near the East Corner of the District. Last half of May.

*Scirpus pungens*, Vahl.

Shores of the Potomac, between tides. Culms often twisted. June, July.

*Scirpus validus*, Vahl. GREAT BULRUSH. TULE.

June, July.

*Scirpus debilis*, Pursh.

Terra Cotta; also on the Flats below Chain Bridge. Middle of September.

*Scirpus fluviatilis*, Gray. RIVER CLUB-RUSH.

July.

*Scirpus sylvaticus*, L. WOOD CLUB-RUSH.

Anacostia Road above Uniontown (Dr. Vasey, 1881). Last half of July.

†*Scirpus atrovirens*, Muhl. CLUB-RUSH.

July.

*Scirpus polyphyllus*, Vahl.

June, July.

*Scirpus lineatus*, Michx.

June.

†*Scirpus Eriophorum*, Michx. WOOL-GRASS. CLUMP-HEAD GRASS.

August.

†*Eriophorum Virginicum*, L. COTTON-GRASS.

Terra Cotta Swamp. August; fruit, end of September.

*Fimbristylis autumnalis*, Roem. & Schultes.

July to September.

*Fimbristylis capillaris*, Gray.

Reform School. September 15, 1878 (late).

*Rhynchospora alba*, Vahl. BEAK-RUSH.

Holmead Swamp. July, August.

†*Rhynchospora glomerata*, Vahl.

July.

*Scleria triglomerata*, Vahl. NUT-RUSH.

Near the Agricultural College, Md. (Dr. Vasey).

*Scleria oligantha*, Ell.

Rock Creek above Davis's Quarry; June 1874 (Dr. Vasey).

*Scleria pauciflora*, Muhl.

Rock Creek above Davis's Quarry (Dr. Vasey); near the crossing of the Benning Road and the Anacostia Road. May, June.

*Carex polytrichoides*, Muhl. SEDGE.

June.



**Carex Willdenovii**, Schk.

Middle of May to middle of June.

**Carex Steudelti**, Kunth.

High Island. Last week in May.

**Carex bromoides**, Schk.

Long Bridge (Dr. Vasey).

**Carex decomposita**, Muhl.

In a "water-pocket" of a rock near the Potomac above Sandy Landing, on the Maryland side, May 22, 1881; then rather young.

**Carex vulpinoidea**, Michx.

Last of May or first of June.

† **Carex stipata**, Muhl.

Third week in May.

**Carex sparganioides**, Muhl.

Little Falls (Dr. Vasey).

**Carex ocephalophora**, Muhl.

Last half of May.

**Carex ocephalophora**, Muhl., var. *angustifolia*, Boott.

Woodley Park. End of May.

**Carex Muhlenbergii**, Schk.

Last of May or first of June.

**Carex rosea**, Schk.

Last of May.

**Carex rosea**, Schk., var. *minor*, Boott.

Last of May.

**Carex stellulata**, L.

Last of May.

**Carex scoparia**, Schk.

Middle of June.

**Carex lagopodioides**, Schk.

Last of June.

**Carex cristata**, Schw.

Potomac City, July 14, 1878.

**Carex fenea**, Willd.

Hunting Creek (Dr. Vasey).

**Carex straminea**, Schk.

First half of June.

**Carex straminea**, Schk., var. *tenera*, Boott.

Not rare (Dr. Vasey).

*Carex straminea*, Schk., var. *aperta*, Boott.

Common (Dr. Vasey).

*Carex vulgaris*, Fries.

Chain Bridge (Dr. Vasey, May 22, 1881.)

*Carex torta*, Boott.

Broad Branch, (Dr. Vasey); Virginia shore of the Potomac above Rosalyn. Last half of May.

*Carex angustata*, Boott. [*C. stricta*, Lam.] Tussock Sedge.

Middle of May.

† *Carex orinata*, Lam.

First half of July.

*Carex gynandra*, Schw.

June.

*Carex Shortiana*, Dew.

First half of May.

*Carex tetanica*, Schk.

Oxen Run; High Island. Last half of May.

*Carex tetanica*, Schk., var. *Woodii*, Olney.

Very peculiar in habit. Insane Asylum; Rock Creek, opposite Brightwood. Last of May or first of June.

† *Carex granularis*, Muhl.

Last week in May.

*Carex glaucoidea*, Porter.

Rock Creek (Dr. Vasey).

*Carex pallescens*, L.

Spikes mostly 4, with staminate flowers at the apex. Last of May or first of June.

*Carex pallescens*, L., var. *undulata*, Gray.

Insane Asylum. First of June.

*Carex grisea*, Wahl.

A large and a small form, the latter of which is probably the var. *angustifolia*, Boott. May.

*Carex gracillima*, Schw.

Back Lick Run; Corcoran's Woods. First half of May.

† *Carex virescens*, Muhl.

Last of May or first of June.

*Carex virescens*, Muhl., var. *elliptica*, Olney.

First half of June.

*Carex triceps*, Michx.

A form occurs with staminate flowers at the apex of the spikes.— First half of June.

**Carex platyphylla**, Carey.

Last of April or first of May.

**Carex Careyana**, Torr.

Dead Run, three miles above Langley, Va. (Dr. Vasey, May 15, 1881).

**Carex retrocurva**, Dew.

Rock Creek (Dr. Vasey).

**Carex digitalis**, Willd.

Last of May or first of June.

† **Carex laxiflora**, Lam.

Last half of May.

**Carex laxiflora**, Lam., var. *styloflexa*, Boott.

Last half of May.

**Carex laxiflora**, Lam., var. *plantaginea*, Boott.

Last half of May.

**Carex laxiflora**, Lam., var. *intermedia*, Boott.

Last half of May.

**Carex laxiflora**, Lam., var. *blanda*, Sulliv.

Last half of May.

**Carex laxiflora**, Lam., var. *gracillima*, Boott.

Middle of May.

**Carex Hitchcockiana**, Dew.

Last half of May.

**Carex oligocarpa**, Schk.

First half of June.

**Carex umbellata**, Schk.

In crevices of rocks, top of High Island; rare. Affected with a blight. Last half of April.

**Carex Emmonsii**, Dew.

Last of April or first of May.

**Carex nigro-marginata**, Schw.

East of Fort Mahan (Dr. Vasey); above Bladensburg (Professor Chickering).

† **Carex Pennsylvanica**, Lam.

May.

† **Carex varia**, Muhl.

Dry Hills, Rock Creek, &c. (Dr. Vasey).

† **Carex pubescens**, Muhl.

High Island. Last week in May.

† **Carex millacea**, Muhl.

Middle to end of May.

**Carex debilis**, Michx.

Last week in May to middle of June.

**Bull. Nat. Mus. No. 22—9**

**Carex vestita**, Willd.

Sligo Creek; Bladensburg. Middle of May.

† **Carex riparia**, Curtis.

Eastern Branch Marsh. Last of May or first of June.

**Carex comosa**, Boott.

Last half of May.

**Carex Pseudo-Cyperus**, L.

Swamps, Rock Creek Region (Dr. Vasey).

**Carex hystericina**, Willd.

Flats of the Potomac below Chain Bridge, June 5, 1881; then in good condition. Plant deep green.

† **Carex tentaculata**, Muhl.Bracts conspicuously sheathing. Spikes not sessile, the lower sometimes on long stalks 8<sup>cm</sup> or 10<sup>cm</sup> long; perigynia 8<sup>mm</sup> to 10<sup>mm</sup> long. The typical form has not been found. I collected a remarkably etiolated state of this on the Eastern Branch Marsh (see p. 33). Last of May or in June.**Carex intumescens**, Rudge.

End of May.

† **Carex lupulina**, Muhl.

Last half of May.

**Carex folliculata**, L.

Last half of May.

† **Carex squarrosa**, L.

Last of May or in June.

**Carex stenolepis**, Torr.

June.

**Carex bullata**, Schk.

Meadow near the Anacostia Road and Beaver Dam Branch; also, Reform School. Last half of June and to middle of July.

**GRAMINEÆ.****GRASS FAMILY.**† **Leersia Virginica**, Willd. WHITE GRASS.

August.

† **Leersia oryzoides**, Swartz. RICE CUT-GRASS.

August, September.

† **Zizania aquatica**, L. INDIAN RICE. WATER OATS.

August, September.

**Alopecurus geniculatus**, L. FLOATING FOXTAIL GRASS.

Marsh at mouth of Hunting Creek. Middle of May to middle of June.

***Alopecurus geniculatus*, L., var. *aristulatus*, Steud. *Synopsis Plantarum glumacearum*, 147, 5. [*A. aristulatus*, Michx.] WILD FOXTAIL GRASS.**

† ***Phleum pratense*, L. TIMOTHY. HERD'S-GRASS (of New England).**  
June.

***Vilfa aspera*, Beauv. RUSH-GRASS.**  
Little Falls (Dr. Vasey, 1874).

***Agrostis perennans*, Tuckerm. THIN GRASS.**  
August, September.

***Agrostis scabra*, Willd. HAIR-GRASS.**  
Last of May or first of June.

***Agrostis vulgaris*, With. RED-TOP. HERD'S-GRASS (of Pennsylvania).**  
Middle of June to middle of July.

***Agrostis alba*, L. FIORIN. WHITE BENT-GRASS.**  
Last of June and through July.

***Cinna arundinacea*, L. WOOD REED-GRASS.**  
August, September.

***Muhlenbergia sobolifera*, Trin. DROP-SEED GRASS.**  
Rocky Woods, not rare (Dr. Vasey).

***Muhlenbergia Mexicana*, Trin.**  
September.

***Muhlenbergia sylvatica*, Torr. & Gray.**  
September.

***Muhlenbergia Willdenovii*, Trin.**  
July, August.

***Muhlenbergia diffusa*, Schreb. NIMBLE-WILL.**  
September.

***Muhlenbergia capillaris*, Kunth. HAIR-GRASS.**  
Once found, September 26, 1875, at Great Falls; not seen since.

***Brachyelytrum aristatum*, Beauv.**  
Last of July or first of August.

***Calamagrostis Nuttalliana*, Steud. REED BENT-GRASS.**  
First half of September.

***Stipa avenacea*, L. BLACK OAT-GRASS.**  
Last of May or first of June.

***Aristida dichotoma*, Michx. TRIPLE-AWNED GRASS. POVERTY-GRASS.**  
Sandy places (Dr. Vasey).

† ***Aristida gracilis*, Ell.**  
Last of September or first of October.

***Aristida oligantha*, Michx.**  
Last of September.

***Aristida purpurascens*, Poir.**

Little Falls (Dr. Vasey).

***Spartina cynosuroides*, Willd. FRESH-WATER CORD-GRASS.**

Flats under Chain Bridge. August.

***Gymnopogon racemosus*, Beauv. NAKED-BEARD GRASS.**

Last half of September.

***Cynodon Dactylon*, Pers. BERMUDA-GRASS. SCUTCH-GRASS.**

All my efforts to find developed grains have thus far proved unavailing. July.

**†*Eleusine Indica*, Gaertn. CRAB-GRASS. YARD-GRASS.**

July.

***Tricuspis sealerioides*, Torr. TALL RED-TOP.**

August.

**†*Dactylis glomerata*, L. ORCHARD-GRASS.**

Middle of May.

***Eatonia Pennsylvanica*, Gray.**

Varies much in appearance, there being a wood-form with slender culms and very short upper leaves, and a meadow-form much taller and stouter, with the panicle partly included and upper leaves flat, 5<sup>mm</sup> wide and nearly a decimeter in length. Last half of May.

***Melica mutica*, Walt. MELIC-GRASS.**

Last of April or first of May.

***Glyceria nervata*, Trin. MANNA GRASS. FOWL MEADOW-GRASS.**

Last of May.

***Glyceria aquatica*, Smith. REED MEADOW-GRASS.**

Terra Cotta Swamp. Last of June or first of July.

***Glyceria fluitans*, R. Br.**

Broadwater; found only in one of the many pools among rocks. July 6, 1879, late; should be collected in June.

**†*Poa annua*, L. LOW SPEAR-GRASS.**

Last of April or first May.

**†*Poa compressa*, L. WIRE-GRASS.**

Last of May or first of June.

***Poa compressa*, L., var. *gracilis* (Oakes?).**

Habit very unlike that of the type, and more certainly indigenous. First half of June.

**†*Poa pratensis*, L. COMMON MEADOW-GRASS. KENTUCKY BLUE GRASS.**

Middle to end of May.

***Poa trivialis*, L. ROUGHISH MEADOW-GRASS.**

Last half of May.

***Poa sylvestris*, Gray.**

Last half of May.

***Poa flexuosa*, Muhl.**

First half of May.

***Poa brevifolia*, Muhl.**

March or early in April.

***Eragrostis reptans*, Nees.**

Islands of the Potomac. July, August.

***Eragrostis pycnoides*, Beauv.**

Rare. July.

***Eragrostis pycnoides*, Beauv., var. *megastachya*, Gray.**

In the city. July.

***Eragrostis Frankii*, Meyer.**

Little Falls, rare. September.

***Eragrostis Purshii*, Schrad. (?)**

Abundant in the city, and apparently introduced. Dr. Vasey thinks this is *E. Purshii*, and so it must be if the acute 3-nerved flowering glume is characteristic of that species, but our plant is often only 12<sup>cm</sup> to 15<sup>cm</sup> high, and the spikelets are generally as long as or longer than their pedicels. I am strongly inclined to believe that it is a form of *E. pilosa*. July.

***Eragrostis capillaris*, Nees.**

August, September.

† ***Eragrostis pectinacea*, Gray.**

July to September.

***Festuca Myurus*, L. FESCUE-GRASS.**

Last half of May.

† ***Festuca tenella*, Willd.**

First half of June.

***Festuca ovina*, L. SHEEP'S FESCUE.**

Waste places in the city (Dr. Vasey).

***Festuca elatior*, L. TALLER FESCUE. MEADOW-FESCUE.**

Waste grounds in the city. First half of June.

***Festuca nutans*, Willd.**

Last half of May.

***Bromus secalinus*, L. CHESS. CHEAT.**

Middle of May to middle of June.

***Bromus racemoseus*, L. UPRIGHT CHESS.**

Last of May.

***Bromus mollis*, L. SOFT CHESS.**

This and the last are scarcely distinct, while intermediate forms seem to connect them with *B. secalinus*. Last half of May.

***Bromus ciliatus*, L.**

Last of May or first of June.

**Bromus ciliatus**, L., var. **purgans**, Gray.

June.

**Bromus sterilis**, L.

Anacostia Road above Uniontown, rare. Collected only July 8, 1877, then rather advanced.

† **Uniola latifolia**, Michx. SPIKE-GRASS.

Bluffs of the Potomac. Last of July or in August.

**Uniola gracilis**, Michx.

Reform School. Last of July or first of August.

† **Lolium perenne**, L. DARNEL. RAY-GRASS. RYE-GRASS.

Last of May or first of June.

**Triticum repens**, L. COUCH-GRASS. QUITCH-GRASS. QUICK-GRASS.

Last of May.

**Elymus Virginicus**, L. LYME-GRASS. WILD RYE.

July, August.

**Elymus Canadensis**, L.

August, September.

**Elymus striatus**, Willd.

First of July.

**Elymus striatus**, Willd., var. **villosus**, Gray.

High Island. First half of July.

**Gymnostichum Hystrix**, Schreb. BOTTLE-BRUSH GRASS.

June.

**Danthonia spicata**, Beauv. WILD OAT-GRASS.

Middle of May to Middle of June.

† **Trisetum palustre**, Torr.

Not common. Last half of May.

**Aira flexuosa**, L. COMMON HAIR-GRASS.

Often nearly a meter in height. Last of May.

**Aira caryophylla**, L.

Common in the eastern districts. First half of May.

**Holcus lanatus**, L. VELVET-GRASS.

June.

† **Anthoxanthum odoratum**, L. SWEET VERNAL GRASS.

First half of May.

**Phalaris Canariensis**, L. CANARY-GRASS.

Sparingly springing up from refuse heaps in the city. June, July.

† **Paspalum setaceum**, Michx.

August, September.

**Paspalum læve**, Michx.

August.



***Panicum filiforme*, L. PANIC-GRASS.**

September.

† ***Panicum sanguinale*, L. CRAB-GRASS. CROP-GRASS. FINGER-GRASS.**

July.

***Panicum anceps*, Michx.**

Dry ground; panicle loose; light colored; spikelets  $3\frac{1}{2}$  mm long; fertile flower 2 mm long; bristles at the apex of the flowering glume 5 or 6, crowded. Last of September or first of October.

***Panicum agrostoides*, Spreng.**

Moist ground; sheaths smooth; spikelets 2½ mm long. A few conical bristles project from the blunt apex of the flowering glume of the fertile flower, at some distance from the incurved margin. These are often reduced to 2 or 3, well separated from each other. Panicle very dense, purple. Culms flat; fertile flowers 1 mm long, lanceolate or linear. Last of September or first of October.

***Panicum proliferum*, Lam.**

Not common. Late in September.

† ***Panicum capillare*, L. OLD-WITCH GRASS.**

August.

***Panicum virgatum*, L.**

July, August.

† ***Panicum latifolium*, L.**

End of May.

***Panicum latifolium*, L., var. *molle*, Vasey, n. v.**

This variety is soft-velvety throughout and especially on the sheaths and under surface of the leaves; even the culms below the joints are downy, and the joints themselves are bearded with long and very soft white hairs. The flowers are triandrous and purplish. End of May.

***Panicum olandestinum*, L.**

Forms with small heads occur uniting this with wide-leaved states of *P. dichotomum*. June.

***Panicum microcarpon*, Muhl.**

The late flowering-time of this species is a convenient means of distinguishing it from any of the broad-leaved forms of *P. dichotomum*. July.

***Panicum viscidum*, Ell.**

Reform School. Last half of July.

***Panicum pauciflorum*, Ell.**

High Island. May 25, 1879.

***Panicum dichotomum*, L.**

I distinguished twelve well-marked forms, probably embracing several good species.

Dr. Vasey has kindly given this species a special study expressly for this work, and chiefly from specimens furnished him from this locality by myself or of his own collection, and he makes the following report upon it:

"It is very difficult to classify the varieties of this polymorphous species. So far as our forms are concerned, they may be grouped as follows:

"1st. Those with narrow leaves, small panicles, and small flowers, including the varieties *nitidum*, *barbulatum*, and *ciliatum*, say, *Microcarpa*.

"2d. Those of a larger or stronger growth, with broader leaves and ampler panicles, with flowers generally somewhat larger. This includes what has been called *P. sphaerocarpum*, Ell., and *P. laxiflorum*, Lam.

"3d. A still larger form, with leaves broader and more rigid, and spikelets larger, approaching some forms of *P. latifolium* (perhaps *P. nervosum*, Ell.), and which probably should be considered a distinct species, or a variety of *P. latifolium*."

A comparison of the *Panicums* of this group shows that the species which tend most strongly to coalesce are *P. latifolium*, *P. clandestinum*, and *P. dichotomum*. These, with perhaps *P. microcarpon*, seem to constitute one large polymorphous species.

Middle of May to September, but chiefly in June.

***Panicum depauperatum*, Muhl.**

June.

***Panicum verrucosum*, Muhl.**

Not common. September.

† ***Panicum Crus-galli*, L. BARNYARD-GRASS.**

July.

***Panicum Crus-galli*, L., var. *hispidum*, Gray.**

Custis Spring. Apparently indigenous. August.

***Setaria verticillata*, Beauv. BRISTLY FOXTAIL GRASS.**

Waste lots in the city (Dr. Vasey).

† ***Setaria glauca*, Beauv. FOXTAIL.**

July, August.

***Setaria viridis*, Beauv. GREEN FOXTAIL. BOTTLE-GRASS.**

July, August.

***Cenchrus tribuloides*, L. BUR-GRASS. HEDGEHOG-GRASS.**

Reform School. Not common.

† ***Tripsacum dactyloides*, L. GAMA-GRASS. SESAME-GRASS.**

Along the Potomac. Not abundant. July.

***Erianthus alopecuroides*, Ell. WOOLLY BEARD-GRASS.**

Holmead Swamp; Terra Cotta. August, September.

† ***Andropogon furcatus*, Muhl. BEARD-GRASS.**

August, September.

***Andropogon scoparius*, Michx.**

September.

***Andropogon argenteus*, Ell.**

September, October.

***Andropogon Virginicus*, L. BROOM-SAGE.**

September, October.

***Andropogon macrourus*, Michx.**

Marlboro' Road; Sligo Creek. September, October.

***Sorghum nutans*, Gray. INDIAN GRASS. WOOD-GRASS.**

August, September.

## GYMNOSPERMS.

## CONIFERÆ.

## PINE FAMILY.

† *Juniperus Virginiana*, L. RED CEDAR. SAVIN.

Male aments in April.

† *Pinus rigida*, Miller. PITCH PINE.

This species well illustrates the persistence of cones. On March 26, 1876, I made observations on a large tree recently blown down in the vicinity of the Blair Road and Sligo Creek. Cones in a good state of preservation were still adherent to the trunk of the tree 4½ meters from the top, where it had a girth of half a meter. As these cones were developed from the branches of the season, this affords some idea of the length of time since the part of the tree to which they adhered constituted its summit. Aments in May.

*Pinus pungens*, Michx. TABLE MOUNTAIN PINE.

Near Rock Creek, opposite Crystal Spring. Some dozen fine trees.

† *Pinus inops*, Ait. SCRUB PINE. JERSEY PINE.

Aments, end of April or first of May.

† *Pinus mitis*, Michx. YELLOW PINE.

Aments, middle of May.

† *Pinus Strobus*, L. WHITE PINE.

Aments, middle of May.

*Tsuga Canadensis*, Carrière. [*Abies Canadensis*, Michx.] HEMLOCK SPRUCE.

Bluffs below Great Falls, Va.

## CRYPTOGAMIA.

## VASCULAR CRYPTOGRAMIA.

## EQUISETACEÆ.

## HORSETAIL FAMILY.

† *Equisetum arvense*, L. COMMON HORSETAIL.

Last week in April.

† *Equisetum hyemale*, L. SCOURING RUSH. SHAVE-GRASS.

Common. A very large form, a meter in height, was found in a ravine above the Receiving Reservoir, with spikes already formed, on the 17th of February, 1878. June.

## FILICES.

## FERNS.

† *Polypodium vulgare*, L. COMMON POLYPODY.

† *Cheilanthes vestita*, Swartz. HAIRY LIP-FERN. CLOTHED LIP-FERN.

Great Falls; Chain Bridge.

† *Pellaea atropurpurea*, Link. DARK PURPLE ROCK-BRAKE. CLAYTON'S CLIFF-BRAKE.

Georgetown (Professor Chickering); Alexandria (Dr. Vasey); Great Falls.

† *Pteris aquilina*, L. BRAKE. BRACKEN. EAGLE-FERN.  
May, June.

† *Adiantum pedatum*, L. AMERICAN MAIDEN-HAIR.  
Last of May:

† *Woodwardia angustifolia*, Smith. NETTED CHAIN-FERN.  
August, September.

*Woodwardia Virginica*, Smith. COMMON CHAIN-FERN. VIRGINIA CHAIN-FERN.  
Terra Cotta Swamp. July, August.

† *Asplenium Trichomanes*, L. ENGLISH MAIDEN-HAIR. DWARF SPLEENWORT. MAIDEN-HAIR SPLEENWORT.

Remarkable circumnutations of the fronds of this plant were discovered in 1879 by Professor E. J. Loomis, of Washington.

† *Asplenium ebeneum*, Ait. EBONY SPLEENWORT.  
June.

† *Asplenium angustifolium*, Michx. NARROW-LEAVED SPLEENWORT.

This plant was formerly found by Dr. Foreman and others on High Island, but has not been seen there for many years. Mr. O. M. Bryan has, however, recently found it at Marshall Hall, opposite Mount Vernon, and specimens of his collecting there have been seen by Dr. Foreman, who vouches for their authenticity. Mr. William Palmer has seen it growing abundantly at Seneca, Md., but this alone would not entitle it to admission to this catalogue.

† *Asplenium thelypteroides*, Michx. SILVERY SPLEENWORT.  
July.

*Asplenium Filix-femina*, Bernh. LADY-FERN.  
July.

*Camptosorus rhizophyllus*, Link. WALKING FERN. WALKING LEAF.  
Cabin John Run. Discovered by Dr. Frank Baker.

*Phegopteris hexagonoptera*, Fee. HEXAGON BEECH-FERN.  
June, July.

*Aspidium Noveboracense*, Swartz. NEW YORK SHIELD-FERN.  
July.

*Aspidium Thelypteris*, Swartz. MARSH SHIELD-FERN.  
July, August.

*Aspidium cristatum*, Swartz. CRESTED SHIELD-FERN. CRESTED WOOD-FERN.  
Carroll Estate. Sterile fronds only thus far found.

*Aspidium Goldianum*, Hook. GOLDIE'S WOOD-FERN.

Collected by Dr. Vasey and myself near the Conduit Road below Cabin John Run, July 4, 1880.

*Aspidium Filix-mas*, Swartz. MALE FERN.  
Not common. September, October.

***Aspidium marginale*, Swartz. EVERGREEN WOOD-FERN.**

September, October.

***Aspidium spinulosum*, Swartz, var. *intermedium*, Willd. COMMON WOOD-FERN.**

September, October.

† ***Aspidium acrostichoides*, Swartz. CHRISTMAS FERN. CHRISTMAS SHIELD-FERN.**

September, October.

***Cystopteris fragilis*, Bernh. BRITTLE FERN.**

High Island. July.

† ***Onoclea sensibilis*, L. SENSITIVE FERN.**

Last of May or in June.

***Woodsia obtusa*, Torr. OBTUSE-LEAVED WOODSIA.**

End of May or in June.

***Dicksonia pilosiuscula*, Willd. [*D. punctilobula*, Kunze.] HAY-SCENTED FERN.**

HAIRY DICKSONIA.

June.

***Lygodium palmatum*, Swartz. CLIMBING FERN. HARTFORD-FERN.**

Thus far found only in one little swamp near the Sligo; in fruit October 12, 1879.

This plant is annually brought into the Washington markets from some point in Maryland not yet discovered by botanists.

***Osmunda regalis*, L. ROYAL FERN. FLOWERING FERN.**

June.

***Osmunda Claytoniana*, L. CLAYTON'S FLOWERING FERN.**

July.

† ***Osmunda cinnamomea*, L. CINNAMON FERN.**

Last of May or first of June.

#### OPHIOGLOSSACEÆ.

##### ADDER'S-TONGUE FAMILY.

† ***Botrychium ternatum*, Swartz, var. *obliquum*, Milde. TERNATE GRAPE-FERN.**

September to November; found in fine condition November 16, 1873. The brown fronds persist through the hardest winters.

† ***Botrychium ternatum*, Swartz, var. *dissectum*, Milde.**

September to November; found as late as November 3, 1878.

† ***Botrychium Virginianum*, Swartz. RATTLESNAKE GRAPE-FERN. VIRGINIAN GRAPE-FERN.**

Last of May or first of June.

† ***Ophioglossum vulgatum*, L. COMMON ADDER'S-TONGUE.**

Locke's Branch of Rock Creek near Blagden's Mill (Mr. J. M. Comstock, 1874); Bladensburg (Professor Chickering); Back Lick Run. May.

#### LYCOPODIACEÆ.

##### CLUB-MOSS FAMILY.

† ***Lycopodium lucidulum*, Michx. CLUB-MOSS.**

August.

†*Lycopodium dendroideum*, Michx. GROUND-PINE.

Not common. July to October.

*Lycopodium complanatum*, L. CROWFOOT.

September, October.

*Lycopodium complanatum*, L., var. *sabinaefolium*, Spring.

Two miles north of Bladensburg. In young fruit July 20, 1879.

*Selaginella rupestris*, Spring.

Great Falls. Specimens collected by Dr. Schott are in the herbarium of the Department of Agriculture. Not seen recently.

*Selaginella apus*, Spring.

Foundry Run (Dr. Vasey); Reform School. July.

## CELLULAR CRYPTOGRAMIA.

### MUSCI.

#### MOSES.

The list of *Musci* and *Hepaticæ* which follows was prepared by the late Mr. Rudolph Oldberg for the *Flora Columbiana*, published in 1876. It is reproduced here almost wholly unchanged except that the habitat is omitted according to the general plan of this work, and a few changes have been made in the names and authorities as well as in the arrangement, to make it conform strictly to Sullivant's work.

*Sphagnum cymbifolium*, Dill.

*Sphagnum squarrosum*, Pers.

*Sphagnum acutifolium*, Ehrh.

*Sphagnum cuspidatum*, Ehrh.

*Andræa rupestris*, Turner.

*Phascum sessile*, Br. & Sch.

*Phascum coherens*, Hedw.

*Phascum triquetrum*, Spruce.

*Phascum cuspidatum*, Schreb.

*Phascum alternifolium*, Brid.

*Phascum subulatum*, Schreb.

*Phascum Sullivantii*, Schimp.

*Bruchia flexuosa*, Schwaegr.

*Weisia viridula*, Brid.

*Trematodon longicollis*, Rich.

*Dicranum varium*, Hedw.

*Dicranum heteromallum*, Hedw.

*Dicranum scoparium*, L.

*Trematodon purpureus*, Brid.

*Leucobryum glaucum*, Hampe.  
*Leucobryum minus*, Hampe.  
*Fissidens minutulus*, Sulliv.  
*Fissidens oemundiioides*, Hedw.  
*Trichostomum pallidum*, Hedw.  
*Trichostomum glaucescens*, Hedw.  
*Barbula unguiculata*, Hedw.  
*Barbula caespitosa*, Schwaegr.  
*Pottia truncata*, Br. & Sch.  
*Tetraphis pellucida*, Hedw.  
*Drummondia clavellata*, Hook.  
*Orthotrichum Canadense*, Br. & Sch.  
*Schistidium apocarpum*, Br. & Sch.  
*Grimmia Pennsylvanica*, Schwaegr.  
*Racomitrium fasciculare*, Brid.  
*Hedwigia ciliata*, Ehrh.  
*Diphyscium foliosum*, Web. & Mohr.  
*Atrichum undulatum*, Beauv.  
*Atrichum angustatum*, Beauv.  
*Pogonatum brevicaulis*, Brid.  
*Pogonatum urnigerum*, Brid.  
*Polytrichum commune*, L.  
*Polytrichum juniperinum*, Hedw.  
*Aulacomnium heterostichum*, Br. & Sch.  
*Bryum pyriforme*, Hedw.  
*Bryum Wahlenbergii*, Schwaegr.  
*Bryum argenteum*, L.  
*Bryum pseudo-triquetrum*, Schwaegr.  
*Bryum caespiticium*, L.  
*Mnium stellare*, Hedw.  
*Mnium Drummondii*, Br. & Sch.  
*Mnium cuspidatum*, Hedw.  
*Bartramia pomiformis*, Hedw.  
*Bartramia fontana*, Brid.  
*Funaria hygrometrica*, Hedw.

- Physcomitrium pyriforme*, Br. & Sch.  
*Physcomitrium hians*, Lind.  
*Fontinalis bifurcata*, Sulliv.  
*Leucodon julaceus*, Sulliv.  
*Dichelyma subulatum*, Myrin.  
*Leptodon trichomitrium*, Mohr.  
*Anomodon attenuatus*, Hub.  
*Leskea obscura*, Hedw.  
*Leskea rostrata*, Hedw.  
*Thelia hirtella*, (Hedw.) Sulliv.  
*Thelia asprella*, (Schimp), Sulliv.  
*Pylaisæa intricata*, Bryol. Europ.  
*Platygyrium repens*, Bryol. Europ.  
*Cylindrothecium cladorrhizans*, Bryol. Europ.  
*Cylindrothecium seductrix*, Bryol. Europ.  
*Climacium Americanum*, Brid.  
*Hypnum tamariscinum*, Hedw.  
*Hypnum triquetrum*, L.  
*Hypnum splendens*, Hedw.  
*Hypnum hians*, Hedw.  
*Hypnum Sullivantii*, Spruce.  
*Hypnum strigosum*, Hoffm.  
*Hypnum piliferum*, Schreb.  
*Hypnum Boscii*, Schwaegr.  
*Hypnum serrulatum*, Hedw.  
*Hypnum deplanatum*, Sch.  
*Hypnum rusciforme*, Weis.  
*Hypnum recurvans*, Schwaegr.  
*Hypnum Schreberi*, Willd.  
*Hypnum stramineum*, Dickson.  
*Hypnum uncinatum*, Hedw.  
*Hypnum fluitans*, L.  
*Hypnum cupressiforme*, L.  
*Hypnum curvifolium*, Hedw.  
*Hypnum pratense*, Koch.



*Hypnum salebrosum*, Hoffm.  
*Hypnum lætum*, Brid.  
*Hypnum hispidulum*, Brid.  
*Hypnum radicale*, Brid.  
*Hypnum orthocladon*, Beauv.  
*Hypnum riparium*, Hedw.  
*Hypnum Lescurii*, Sulliv.  
*Hypnum fulvum*, Hook. & Wils.  
*Hypnum sylvaticum*, L.

**HEPATICÆ**

LIVERWORTS.

*Riocia lutescens*, Schw.  
*Anthoceros punctatus*, L.  
*Marchantia polymorpha*, L.  
*Pegatella conica*, Corda.  
*Metzgeria furcata*, Nees.  
*Aneura palmata*, Nees.  
*Steetsia Lyellii*, Lehm.  
*Pellia epiphylla*, Nees.  
*Geocalyx graveolens*, Nees.  
*Chiloscyphus polyanthos*, Corda.  
*Lophocolea bidentata*, Nees.  
*Jungermannia trichophylla*, L.  
*Jungermannia setacea*, Weber.  
*Jungermannia connivens*, Dickson.  
*Jungermannia Schraderi*, Martius.  
*Scapania nemorosa*, Nees.  
*Plagiochila spinulosa*, Nees & Montagne.  
*Plagiochila asplenioides*, Nees & Montagne.  
*Frullania Grayana*, Montagne.  
*Frullania Virginica*, Lehm.  
*Frullania Eboracensis*, Lehm.  
*Lejeunia cucullata*, Nees.  
*Madotheca platyphylla*, Dumort.  
*Radula complanata*, Dumort.

***Ptilidium ciliare*, Nees.**

***Trichocolea tomentella*, Nees.**

***Mastigobryum tridenticulatum*, Lindenb.**

***Lepidozia reptans*, Nees.**

***Calypogeia trichomanis*, Corda.**

#### **CHARACTERÆ.**

The following species of this order have been collected by Dr. E. Foreman within our limits, who has referred them to Prof. W. G. Farlow for determination, and has kindly consented to their publication in this work:

***Nitella flexilis*, L.**

Eastern Branch.

***Nitella tenuissima*, Desv.**

Custis Spring.

***Chara polyphylla*, var. *Michauxii*, Al. Braun.**

Carberry Meadows.

***Chara hydrophytha*, Al. Braun.**

Carberry Meadows.

## XVI. SUMMARY.

Number.	Orders.	Genera.	Species.	Varieties.	Species and Varieties.	Introduced Plants.	Woody Plants.	Trees.
1	Ranunculaceæ.....	7	23	4	27	3		
2	Magnoliaceæ.....	2	2		2		2	2
3	Anonaceæ.....	1	1		1		1	1
4	Menispermaceæ.....	1	1		1		1	
5	Berberidaceæ.....	4	4		4	1	1	
6	Nymphaeaceæ.....	3	3		3			
7	Sarraceniacæ.....	1	1		1			
8	Papaveraceæ.....	3	3		3	2		
9	Fumariaceæ.....	3	3		3	1		
10	Cruciferae.....	16	33	1	34	15		
11	Cistaceæ.....	2	2		2			
12	Violaceæ.....	2	9	5	14			
13	Polygalaceæ.....	1	7		7			
14	Caryophyllaceæ.....	9	19		19	8		
15	Illecebraceæ.....	2	2	1	3			
16	Portulacaceæ.....	2	2		2	1		
17	Hypericaceæ.....	3	9		9	1	1	
18	Malvaceæ.....	4	7		7	5		
19	Tiliaceæ.....	1	1		1		1	1
20	Linaceæ.....	1	3		3	1		
21	Geraniaceæ.....	4	9		9	3		
22	Rutaceæ.....	2	2		2	1	2	
23	Illicineæ.....	1	4		4		4	1
24	Celastraceæ.....	2	3	1	4		4	
25	Rhamnaceæ.....	1	2		2		2	
26	Vitaceæ.....	2	6		6		6	
27	Sapindaceæ.....	3	5		5		5	4
28	Anacardiaceæ.....	1	6		6		6	1
29	Leguminosæ.....	24	55	2	57	13	4	3
30	Rosaceæ.....	15	43	3	46	12	30	8
31	Saxifragaceæ.....	8	9		9	3	5	
32	Crassulaceæ.....	2	3		3			
33	Droseraceæ.....	1	1		1			
34	Hamameliaceæ.....	2	2		2		2	1
35	Haloragææ.....	3	3		3			
36	Melastomaceæ.....	1	1		1			
37	Lythraceæ.....	4	4		4			
38	Onagraceæ.....	6	10	1	11			
39	Passifloraceæ.....	1	2		2	1		
40	Cucurbitaceæ.....	1	1		1			
41	Cactaceæ.....	1	1		1			
42	Ficoides.....	1	1		1			
43	Umbelliferae.....	17	22		22	2		
44	Araliaceæ.....	1	4		4		1	1

## XVI. SUMMARY—Continued.

Number.	Orders.	Genera.	Species.	Varieties.	Species and Varieties.	Introduced Plants.	Woody Plants.	Trees.
45	Cornaceæ.....	2	5	—	5	—	5	2
46	Caprifoliaceæ.....	5	12	—	12	3	10	1
47	Rubiaceæ.....	5	12	1	13	—	1	—
48	Valerianaceæ.....	2	4	—	4	1	—	—
49	Dipsacæ.....	1	1	—	1	1	—	—
50	Compositæ.....	53	138	11	149	17	1	—
51	Lobeliaceæ.....	1	5	—	5	—	—	—
52	Campanulaceæ.....	2	2	—	2	—	—	—
53	Ericaceæ.....	11	24	2	26	—	17	2
54	Primulaceæ.....	5	8	2	10	2	—	—
55	Ebenaceæ.....	1	1	—	1	—	1	1
56	Oleaceæ.....	2	4	—	4	—	4	4
57	Apocynaceæ.....	2	2	1	3	1	—	—
58	Asclepiadaceæ.....	4	13	1	14	—	—	—
59	Gentianaceæ.....	4	6	—	6	—	—	—
60	Polemoniaceæ.....	2	6	—	6	—	—	—
61	Hydrophyllaceæ.....	3	4	—	4	—	—	—
62	Borraginaceæ.....	7	12	—	12	3	—	—
63	Convolvulaceæ.....	3	11	—	11	4	—	—
64	Solanaceæ.....	5	8	—	8	5	—	—
65	Scrophulariaceæ.....	15	32	—	32	5	—	—
66	Orobanchaceæ.....	4	4	—	4	1	—	—
67	Lentibulaceæ.....	1	2	—	2	—	—	—
68	Bignoniaceæ.....	2	2	—	2	1	2	1
69	Acanthaceæ.....	2	3	1	4	—	—	—
70	Verbenaceæ.....	3	6	—	6	1	—	—
71	Labiata.....	23	41	1	43	10	—	—
72	Plantaginaceæ.....	1	5	1	6	2	—	—
73	Amarantaceæ.....	2	5	—	5	4	—	—
74	Chenopodiaceæ.....	3	7	2	9	7	—	—
75	Phytolaccaceæ.....	1	1	—	1	—	—	—
76	Polygonaceæ.....	3	22	2	24	7	—	—
77	Podostemaceæ.....	1	1	—	1	—	—	—
78	Aristolochiaceæ.....	2	2	—	2	—	—	—
79	Piperaceæ.....	1	1	—	1	—	—	—
80	Lauraceæ.....	2	2	—	2	—	2	1
81	Thymeleaceæ.....	1	1	—	1	—	1	—
82	Santalaceæ.....	1	1	—	1	—	—	—
83	Loranthaceæ.....	1	1	—	1	—	1	—
84	Euphorbiaceæ.....	4	9	—	9	1	—	—
85	Urticaceæ.....	11	13	—	13	4	6	6
86	Platanaceæ.....	1	1	—	1	—	1	1
87	Juglandaceæ.....	2	7	—	7	—	7	7
88	Myricaceæ.....	1	1	—	1	—	1	—
89	Cupuliferae.....	7	26	1	27	—	27	24
90	Salicaceæ.....	2	14	5	19	7	19	6
91	Ceratophyllaceæ.....	1	1	—	1	—	—	—
92	Araceæ.....	5	6	—	6	—	—	—
93	Lemnaceæ.....	1	1	—	1	—	—	—
94	Typhaceæ.....	2	3	1	4	—	—	—

## XVI. SUMMARY—Continued.

Orders.	Genera.	Species.	Varieties.	Species and Varieties.	Introduced Plants.	Woody Plants.	Trees.
aceae.....	2	9		9			
aceae.....	2	3	2	5			
ocharidaceae.....	2	2		2			
idaceae.....	12	23	1	24			
yllidaceae.....	1	1		1			
odoraceae.....	1	1		1			
aceae.....	2	6		6	1		
oreaceae.....	1	1		1			
aceae.....	1	6		6		4	
aceae.....	19	25		25	5		
aceae.....	2	8	7	15			
deriaceae.....	3	3		3			
nelynacae.....	2	3		3			
laceae.....	1	1		1			
aulonaceae.....	1	1		1			
racae.....	10	94	14	108			
ineae.....	43	104	6	110	26		
erae.....	4	7		7	1	7	7
etaceae.....	1	2		2			
ae.....	16	29	1	30			
glossaceae.....	2	2	2	4			
podaceae.....	2	5	1	6			
i.....	42	98		98			
ticeae.....	23	29		29			
iceae.....	2	4		4			

## RECAPITULATION.

Groups.	Orders.	Genera.	Species.	Varieties.	Species and Varieties.	Introduced Plants.	Woody Plants.	Trees.
.....	45	174	339	18	357	73	83	25
.....	27	169	368	21	389	57	36	9
mydeae.....	72	343	707	39	746	130	119	34
rydeae.....	19	47	116	10	126	30	65	45
ledoneae.....	91	390	823	49	872	160	184	79
edoneae.....	20	113	301	31	332	32	4	
rmae.....	1	4	7		7	1	7	7
gamia.....	112	507	1,131	80	1,211	193	195	86
ryptogamia.....	4	21	38	4	43			
ar Plants.....	116	528	1,169	84	1,253	193	195	86
ryptogamia.....	3	67	131		131			
Flora.....	119	595	1,300	84	1,384	193	195	86

## XVII. CHECK-LIST.

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1. *Clematis ochroleuca*, Ait.
2. *Clematis Viorna*, L.
3. *Clematis Virginiana*, L.
4. *Thalictrum anemonoides*, Michx.
5. *Thalictrum dioicum*, L.
6. *Thalictrum purpurascens*, L.
7. *Thalictrum purpurascens*, L., var. *ceriferum*, C. F. Austin.
8. *Thalictrum Cornuti*, L.
9. *Anemone Virginiana*, L.
10. *Anemone nemorosa*, L.
11. *Anemone Hepatica*, L.
12. *Ranunculus ambigens*, Watson.
13. *Ranunculus pusillus*, Poir.
14. *Ranunculus abortivus*, L.
15. *Ranunculus abortivus*, L., var. *micranthus*, Nutt.
16. *Ranunculus sceleratus*, L.
17. *Ranunculus recurvatus*, Poir.
18. *Ranunculus repens*, L.
19. *Ranunculus repens*, L., var. *hispida*, Torr. & Gray.

20. *Ranunculus repens*, L., var. *nitidus*, Chapman.

21. *Ranunculus bulbosus*, L.

22. *Ranunculus acris*, L.

23. *Aquilegia Canadensis*, L.

24. *Delphinium tricoorne*, Michx.

25. *Delphinium Consolida*, L.

26. *Aconitum uncinatum*, L.

27. *Cimicifuga racemosa*, Nutt.

28. *Magnolia glauca*, L.

29. *Liriodendron Tulipifera*, L.

30. *Asimina triloba*, Duval.

31. *Menispermum Canadense*, L.

32. *Berberis vulgaris*, L.

33. *Caulophyllum thalictroides*, Michx.

34. *Jeffersonia diphylla*, Pers.

35. *Podophyllum peltatum*, L.

36. *Brasenia peltata*, Pursh.

37. *Nuphar advena*, Ait.

38. *Nymphaea odorata*, Ait.

39. *Sarracenia purpurea*, L.

40. *Papaver dubium*, L.

41. *Sanguinaria Canadensis*, L.

42. *Chelidonium majus*, L.

43. *Dicentra Cucullaria*, DC.
44. *Corydalis flavula*, Raf.
45. *Fumaria officinalis*, L.
46. *Nasturtium officinale*, R. Br.
47. *Nasturtium sylvestre*, R. Br.
48. *Nasturtium obtusum*, Nutt.
49. *Nasturtium palustre*, DC.
50. *Nasturtium lacustre*, Gray.
51. *Nasturtium Armoracia*, Fries.
52. *Barbarea vulgaris*, R. Br.
53. *Barbarea praeox*, R. Br.
54. *Arabis lyrata*, L.
55. *Arabis dentata*, Torr. & Gray.
56. *Arabis patens*, Sulliv.
57. *Arabis hirsuta*, Scop.
58. *Arabis laevigata*, Poir.
59. *Arabis Canadensis*, L.
60. *Cardamine rhomboidea*, DC.
61. *Cardamine hirsuta*, L.
62. *Cardamine hirsuta*, L., var. *sylvatica*, Gray.
63. *Dentaria heterophylla*, Nutt.
64. *Dentaria laciniata*, Muhl.
65. *Draba ramosissima*, Desv.
66. *Draba verna*, L.



- 67. *Hesperis matronalis*, L.
- 68. *Sisymbrium officinale*, Scop.
- 69. *Sisymbrium Thellungi*, Gay.
- 70. *Sisymbrium Allaria*, Scop.
- 71. *Erysimum cheiranthoides*, L.
- 72. *Camelina sativa*, Crantz.
- 73. *Brassica Napistrum*, Boiss.
- 74. *Brassica nigra*, Koch.
- 75. *Capsella Bursa-pastoris*, Moench.
- 76. *Lepidium Virginicum*, L.
- 77. *Lepidium campestre*, L.
- 78. *Thlaspi arvense*, L.
- 79. *Raphanus sativus*, L.
- 80. *Helianthemum Canadense*, Michx.
- 81. *Lechea minor*, Walt.
- 82. *Viola lanceolata*, L.
- 83. *Viola primulaefolia*, L.
- 84. *Viola cucullata*, Ait.
- 85. *Viola cucullata*, Ait., var. *palmata*, Gray.
- 86. *Viola cucullata*, Ait., var. *cordata*, Gray.
- 87. *Viola sagittata*, Ait.
- 88. *Viola pedata*, L.
- 89. *Viola pedata*, L., var. *bicolor*, Pursh.

90. *Viola striata*, Ait.
91. *Viola pubescens*, Ait.
92. *Viola pubescens*, Ait., var. *eriocarpa*, Nutt.
93. *Viola glabella*, Nutt.
94. *Viola tricolor*, L., var. *arvensis*, Ging.
95. *Ionidium concolor*, Benth. & Hook.
96. *Polygala incarnata*, L.
97. *Polygala sanguinea*, L.
98. *Polygala fastigiata*, Nutt.
99. *Polygala Curtisii*, Gray.
100. *Polygala ambigua*, Nutt.
101. *Polygala polygama*, Walt.
102. *Polygala Senega*, L.
103. *Dianthus Armeria*, L.
104. *Saponaria officinalis*, L.
105. *Silene stellata*, Ait.
106. *Silene nivea*, DC.
107. *Silene Pennsylvanica*, Michx.
108. *Silene Armeria*, L.
109. *Silene antirrhina*, L.
110. *Lychnis Githago*, Lam.
111. *Cerastium viscosum*, L.
112. *Cerastium vulgatum*, L.
- '13. *Cerastium nutans*, Raf.

114. *Cerastium oblongifolium*, Torr.
115. *Stellaria media*, Smith.
116. *Stellaria pubera*, Michx.
117. *Stellaria longifolia*, Muhl.
118. *Arenaria serpyllifolia*, L.
119. *Sagina apetala*, L.
120. *Sagina decumbens*, Torr. & Gray.
121. *Lepigonum rubrum*, Fries.
122. *Anyolia dichotoma*, Michx.
123. *Anyolia dichotoma*, Michx., var. *capillacea*, Torr.
124. *Paronychia dichotoma*, Nutt.
125. *Portulaca oleracea*, L.
126. *Claytonia Virginica*, L.
127. *Ascyrum Crux-Andreas*, L.
128. *Ascyrum stans*, Michx.
129. *Hypericum prolificum*, L.
130. *Hypericum perforatum*, L.
131. *Hypericum corymbosum*, Muhl.
132. *Hypericum mutilum*, L.
133. *Hypericum Canadense*, L.
134. *Hypericum Sarothra*, Michx.
135. *Elodes Virginica*, Nutt.
136. *Malva rotundifolia*, L.
137. *Malva sylvestris*, L.

- 138. *Sida spinosa*, L.
- 139. *Abutilon Avicennae*, Gaertn.
- 140. *Hibiscus Moscheutos*, L.
- 141. *Hibiscus militaria*, Cav.
- 142. *Hibiscus Trionum*, L.
- 143. *Tilia Americana*, L.
- 144. *Linum Virginianum*, L.
- 145. *Linum striatum*, Walt.
- 146. *Linum usitatissimum*, L.
- 147. *Geranium maculatum*, L.
- 148. *Geranium Carolinianum*, L.
- 149. *Geranium columbinum*, L.
- 150. *Geranium pusillum*, L.
- 151. *Erodium cicutarium*, L'Her.
- 152. *Oxalis violacea*, L.
- 153. *Oxalis corniculata*, L., var. *stricta*, Sav.
- 154. *Impatiens pallida*, Nutt.
- 155. *Impatiens fulva*, Nutt.
- 156. *Xanthoxylum Americanum*, Mill.
- 157. *Ptelea trifoliata*, L.
- 158. *Ilex opaca*, Ait.
- 159. *Ilex decidua*, Walt.
- 160. *Ilex verticillata*, Gray.
- 161. *Ilex laevigata*, Gray.

162. *Euonymus atropurpureus*, Jacq.
163. *Euonymus Americanus*, L.
164. *Euonymus Americanus*, L., var. *obovatus*, Torr. & Gray.
165. *Celastrus scandens*, L.
166. *Ceanothus Americanus*, L.
167. *Ceanothus ovatus*, Desf.
168. *Vitis Labrusca*, L.
169. *Vitis aestivalis*, Michx.
170. *Vitis cordifolia*, Lam.
171. *Vitis riparia*, Michx.
172. *Vitis vulpina*, L.
173. *Ampelopsis quinquefolia*, Michx.
174. *Acer saccharinum*, Wang.
175. *Acer dasycarpum*, Ehrh.
176. *Acer rubrum*, L.
177. *Negundo aceroides*, Moench.
178. *Staphylea trifolia*, L.
179. *Rhus typhina*, L.
180. *Rhus glabra*, L.
181. *Rhus copallina*, L.
182. *Rhus venenata*, DC.
183. *Rhus Toxicodendron*, L.
184. *Rhus aromatica*, Alt.
185. *Baptisia tinctoria*, R. Br.

186. *Baptisia australis*, R. Br.
187. *Crotalaria sagittalis*, L.
188. *Lupinus perennia*, L.
189. *Cytisus scoparius*, Link.
190. *Medicago sativa*, L.
191. *Medicago lupulina*, L.
192. *Melilotus officinalis*, Willd.
193. *Melilotus alba*, Lam.
194. *Trifolium arvense*, L.
195. *Trifolium pratense*, L.
196. *Trifolium reflexum*, L.
197. *Trifolium repens*, L.
198. *Trifolium agrarium*, L.
199. *Trifolium procumbens*, L.
200. *Tephrosia Virginiana*, Pers.
201. *Robinia Pseudacacia*, L.
202. *Astragalus Canadensis*, L.
203. *Stylosanthes elatior*, Swartz.
204. *Desmodium nudiflorum*, DC.
205. *Desmodium acuminatum*, DC.
206. *Desmodium pauciflorum*, DC.
207. *Desmodium rotundifolium*, DC.
208. *Desmodium rotundifolium*, DC., var. *glabratum*, Gray.
209. *Desmodium canescens*, DC.

- 210. *Desmodium cuspidatum*, Hook.
- 211. *Desmodium laevigatum*, DC.
- 212. *Desmodium viridiflorum*, Beck.
- 213. *Desmodium Dillenii*, Darl.
- 214. *Desmodium paniculatum*, DC.
- 215. *Desmodium rigidum*, DC.
- 216. *Desmodium ciliare*, DC.
- 217. *Desmodium Marylandicum*, Boott.
- 218. *Lespedeza repens*, Bart.
- 219. *Lespedeza reticulata*, Pers., var. *angustifolia*, Maxim.
- 220. *Lespedeza violacea*, Pers.
- 221. *Lespedeza Stuevei*, Nutt.
- 222. *Lespedeza hirta*, Ell.
- 223. *Lespedeza capitata*, Michx.
- 224. *Vicia sativa*, L.
- 225. *Vicia tetrasperma*, Loisel.
- 226. *Vicia hirsuta*, Koch.
- 227. *Vicia Caroliniana*, Walt.
- 228. *Lathyrus paluster*, L.
- 229. *Lathyrus venosus*, Muhl.
- 230. *Clitoria Mariana*, L.
- 231. *Amphicarpaea monoica*, Ell.
- 232. *Aplos tuberosa*, Moench.
- 233. *Galsotia mollis*, Michx.

- 234. *Phaseolus perennia*, Walt.
- 235. *Phaseolus helvolus*, L.
- 236. *Rhynchosia tomentosa*, Torr. & Gray.
- 237. *Gleditschia triacanthos*, L.
- 238. *Cassia Marylandica*, L.
- 239. *Cassia Chamæcrista*, L.
- 240. *Cassia nictitans*, L.
- 241. *Cercis Canadensis*, L.
- 242. *Prunus Persica*, Benth & Hook.
- 243. *Prunus Armentaca*, L.
- 244. *Prunus Americana*, Marshall.
- 245. *Prunus Chicasa*, Michx.
- 246. *Prunus spinosa*, L.
- 247. *Prunus Virginiana*, L.
- 248. *Prunus serotina*, Ehrh.
- 249. *Spiræa salicifolia*, L.
- 250. *Spiræa Aruncus*, L.
- 251. *Neillia opulifolia*, Benth. & Hook.
- 252. *Gillenia trifoliata*, Moench.
- 253. *Rubus occidentalis*, L.
- 254. *Rubus villosus*, Ait.
- 255. *Rubus Canadensis*, L.
- 256. *Rubus hispidus*, L.
- 7. *Rubus cuneifolius*, Pursh.



- 258. *Geum album*, Gmel.
- 259. *Geum Virginianum*, L.
- 260. *Geum strictum*, Ait.
- 261. *Geum vernum*, Torr. & Gray.
- 262. *Fragaria Virginiana*, Duchesne.
- 263. *Fragaria Indica*, Andr.
- 264. *Potentilla Norvegica*, L.
- 265. *Potentilla Canadensis*, L.
- 266. *Potentilla Canadensis*, L., var. *simplex*, Torr. & Gray.
- 267. *Alopecurus arvensis*, Scop.
- 268. *Agrimonia Eupatoria*, L.
- 269. *Agrimonia parviflora*, Hook.
- 270. *Poterium Canadense*, Benth. & Hook.
- 271. *Poterium Sanguisorba*, L.
- 272. *Rosa setigera*, Michx.
- 273. *Rosa Carolina*, L.
- 274. *Rosa lucida*, Ehrh.
- 275. *Rosa rubiginosa*, L.
- 276. *Rosa micrantha*, Smith.
- 277. *Rosa cuneata*, L.
- 278. *Pirus coronaria*, L.
- 279. *Pirus arbutifolia*, L.
- 280. *Pirus arbutifolia*, L., var. *melanocarpa*, Hook.

- 281. *Cratægus cordata*, Ait.
- 282. *Cratægus Oxyacantha*, L.
- 283. *Cratægus coccinea*, L.
- 284. *Cratægus Crus-galli*, L.
- 285. *Cratægus parvifolia*, Ait.
- 286. *Amelanchier Canadensis*, Torr. & Gray.
- 287. *Amelanchier Canadensis*, var. *oblongifolia*, Torr. & Gray.
- 288. *Saxifraga Virginiana*, Michx.
- 289. *Mitella diphylla*, L.
- 290. *Heuchera Americana*, L.
- 291. *Chrysosplenium Americanum*, Schwein.
- 292. *Hydrangea arborescens*, L.
- 293. *Philadelphus inodorus*, L.
- 294. *Itea Virginica*, L.
- 295. *Ribes rotundifolium*, Michx.
- 296. *Ribes rubrum*, L.
- 297. *Sedum ternatum*, Michx.
- 298. *Sedum telephioides*, Michx.
- 299. *Penthorum sedoides*, L.
- 300. *Drosera rotundifolia*, L.
- 301. *Hamamelis Virginiana*, L.
- 302. *Liquidambar Styraciflua*, L.
- 303. *Myriophyllum spicatum*, L.

- 304. *Proserpinaca palustris*, L.
  - 305. *Callitriche verna*, L.
  - 306. *Rhexia Virginica*, L.
  - 307. *Ammannia humilis*, Michx.
  - 308. *Cuphea viscosissima*, Jacq.
  - 309. *Lythrum alatum*, Pursh.
  - 310. *Nesaea verticillata*, H. B. K.
  - 311. *Epilobium coloratum*, Muhl.
  - 312. *Jussiea decurrens*, DC.
  - 313. *Ludwigia alternifolia*, L.
  - 314. *Ludwigia hirtella*, Raf.
  - 315. *Ludwigia palustris*, Ell.
  - 316. *Oenothera biennis*, L.
  - 317. *Oenothera sinuata*, L.
  - 318. *Oenothera fruticosa*, L.
  - 319. *Oenothera fruticosa*, L., var. *linearis*, Watson.
  - 320. *Gaura biennis*, L.
  - 321. *Cleome Lutea*, L.
  - 322. *Passiflora incarnata*, L.
  - 323. *Passiflora lutea*, L.
  - 324. *Sicyos angulatus*, L.
  - 325. *Opuntia vulgaris*, Haworth.
  - 326. *Mollugo verticillata*, L.
  - 327. *Hydrocotyle ranunculoides*, L.
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- 328. *Hydrocotyle Americana*, L.
- 329. *Eryngium Virginianum*, Lam.
- 330. *Sanicula Canadensis*, L.
- 331. *Sanicula Marylandica*, L.
- 332. *Erigenia bulbosa*, Nutt.
- 333. *Cicuta maculata*, L.
- 334. *Sium cicutaefolium*, Gmel.
- 335. *Pimpinella integerrima*, Benth. & Hook.
- 336. *Cryptotaenia Canadensis*, DC.
- 337. *Osmorrhiza longistylis*, DC.
- 338. *Osmorrhiza brevistylis*, DC.
- 339. *Chaerophyllum procumbens*, Crantz.
- 340. *Discopleura capillacea*, DC.
- 341. *Thaspium barbinode*, Nutt.
- 342. *Thaspium aureum*, Nutt.
- 343. *Thaspium trifoliatum*, Gray.
- 344. *Archangelica hirsuta*, Torr. & Gray.
- 345. *Pastinaca sativa*, L.
- 346. *Archemora rigida*, DC.
- 347. *Heracleum lanatum*, Michx.
- 348. *Daucus Carota*, L.
- 349. *Aralia spinosa*, L.
- 350. *Aralia racemosa*, L.
- 351. *Aralia nudicaulis*, L.

- 352. *Aralia trifolia*, Decane.
- 353. *Cornus florida*, L.
- 354. *Cornus sericea*, L.
- 355. *Cornus stolonifera*, Michx.
- 356. *Cornus alternifolia*, L.
- 357. *Nyssa multiflora*, Wang.
- 358. *Sambucus Canadensis*, L.
- 359. *Viburnum prunifolium*, L.
- 360. *Viburnum nudum*, L.
- 361. *Viburnum dentatum*, L.
- 362. *Viburnum pubescens*, Pursh.
- 363. *Viburnum acerifolium*, L.
- 364. *Triosteum perfoliatum*, L.
- 365. *Triosteum angustifolium*, L.
- 366. *Symphoricarpos racemosus*, Michx.
- 367. *Symphoricarpos vulgaris*, Michx.
- 368. *Lonicera sempervirens*, Ait.
- 369. *Lonicera Japonica*, Andr.
- 370. *Cephalanthus occidentalis*, L.
- 371. *Houstonia purpurea*, L.
- 372. *Houstonia purpurea*, L., var. *longifolia*, Gray
- 373. *Houstonia cœrulea*, L.
- 374. *Mitobella repens*, L.
- 375. *Diodia teres*, Walt.

- 376. *Galium Aparine*, L.
- 377. *Galium asprellum*, Michx.
- 378. *Galium concinnum*, Torr. & Gray.
- 379. *Galium trifidum*, L.
- 380. *Galium triflorum*, Michx.
- 381. *Galium pilosum*, Ait.
- 382. *Galium circaezana*, Michx.
- 383. *Valeriana pauciflora*, Michx.
- 384. *Fedia olitoria*, Vahl.
- 385. *Fedia Fagopyrum*, Torr. & Gray.
- 386. *Fedia radiata*, Michx.
- 387. *Dipsacus sylvestris*, Mill.
- 388. *Vernonia Noveboracensis*, Willd.
- 389. *Elephantopus Carolinianus*, Willd.
- 390. *Eupatorium purpureum*, L.
- 391. *Eupatorium hyssopifolium*, L.
- 392. *Eupatorium album*, L.
- 393. *Eupatorium tenorifolium*, Willd.
- 394. *Eupatorium rotundifolium*, L.
- 395. *Eupatorium pubescens*, Muhl.
- 396. *Eupatorium sessilifolium*, L.
- 397. *Eupatorium sessilifolium* × *pubescens*, Gray.
- 398. *Eupatorium perfoliatum*, L.
- 399. *Eupatorium ageratoides*, L.

- 400. *Eupatorium aromaticum*, L.
- 401. *Conoclinium coelestinum*, DC.
- 402. *Mikania scandens*, L.
- 403. *Kuhnia eupatorioides*, L.
- 404. *Liatris scariosa*, Willd.
- 405. *Liatris graminifolia*, Willd.
- 406. *Liatris graminifolia*, Willd., var. *dubia*, Gray.
- 407. *Chrysopsis Mariana*, Nutt.
- 408. *Solidago bicolor*, L.
- 409. *Solidago bicolor*, L., var. *concolor*, Gray.
- 410. *Solidago latifolia*, L.
- 411. *Solidago caesia*, L.
- 412. *Solidago stricta*, Ait.
- 413. *Solidago speciosa*, Nutt., var. *angustata*, Gray.
- 414. *Solidago Virga-aurea*, L., var. *humilis*, Gray.
- 415. *Solidago rigida*, L.
- 416. *Solidago elliptica*, Ait.
- 417. *Solidago arguta*, Ait.
- 418. *Solidago altissima*, L.
- 419. *Solidago ulmifolia*, Muhl.
- 420. *Solidago odora*, Ait.
- 421. *Solidago nemoralis*, Ait.
- 422. *Solidago rupestris*, Raf.
- 423. *Solidago Canadensis*, L.

- 424. *Solidago gigantea*, Ait.
- 425. *Solidago lanceolata*, L.
- 426. *Sericocarpus solidagineus*, Nees.
- 427. *Sericocarpus conyzoides*, Nees.
- 428. *Aster corymbosus*, Ait.
- 429. *Aster macrophyllus*, L.
- 430. *Aster concolor*, L.
- 431. *Aster patens*, Ait.
- 432. *Aster laevis*, L.
- 433. *Aster laevis*, L., var. *cyaneus*, Gray.
- 434. *Aster undulatus*, L.
- 435. *Aster cordifolius*, L.
- 436. *Aster ericoides*, L.
- 437. *Aster dumosus*, L.
- 438. *Aster Tradescanti*, L.
- 439. *Aster miser*, L.
- 440. *Aster simplex*, Willd.
- 441. *Aster tenuifolius*, L.
- 442. *Aster carneus*, Nees.
- 443. *Aster aestivalis*, Ait.
- 444. *Aster puniceus*, L.
- 445. *Aster puniceus*, L., var. *vimineus*, Gray.
- 446. *Aster prenanthoides*, Muhl.
- 447. *Aster oblongifolius*, Nutt.



- 448. *Aster Novæ-Angliæ*, L.
- 449. *Diplopappus linearifolius*, Hook.
- 450. *Diplopappus umbellatus*, Torr. & Gray.
- 451. *Diplopappus cornifolius*, Darl.
- 452. *Erigeron Canadensis*, L.
- 453. *Erigeron bellidifolius*, Muhl.
- 454. *Erigeron Philadelphicus*, L.
- 455. *Erigeron annuus*, Pers.
- 456. *Erigeron strigosus*, Muhl.
- 457. *Baccharis halimifolia*, L.
- 458. *Filago Germanica*, L.
- 459. *Antennaria plantaginifolia*, Hook.
- 460. *Gnaphalium polycephalum*, Michx.
- 461. *Gnaphalium uliginosum*, L.
- 462. *Gnaphalium purpureum*, L.
- 463. *Polymnia Canadensis*, L.
- 464. *Polymnia Uvedalia*, L.
- 465. *Silphium trifoliatum*, L.
- 466. *Chrysogonum Virginianum*, L.
- 467. *Ambrosia trifida*, L.
- 468. *Ambrosia trifida*, L., var. *integrifolia*, Gray.
- 469. *Ambrosia artemisiæfolia*, L.
- 470. *Xanthium strumarium*, L.

- 471. *Xanthium spinosum*, L.
- 472. *Heliopsis laevis*, Pers.
- 473. *Eclipta procumbens*, Michx.
- 474. *Rudbeckia laciniata*, L.
- 475. *Rudbeckia triloba*, L.
- 476. *Rudbeckia hirta*, L.
- 477. *Rudbeckia fulgida*, Ait.
- 478. *Helianthus annuus*, L.
- 479. *Helianthus angustifolius*, L.
- 480. *Helianthus occidentalis*, Riddell.
- 481. *Helianthus giganteus*, L.
- 482. *Helianthus strumosus*, L.
- 483. *Helianthus strumosus*, L., var. *mollis*, Gray.
- 484. *Helianthus divaricatus*, L.
- 485. *Helianthus decapetalus*, L.
- 486. *Helianthus doronicoides*, Lam.
- 487. *Helianthus tuberosus*, L.
- 488. *Actinomeris squarrosa*, Nutt.
- 489. *Verbesina Siegesbeckia*, Michx.
- 490. *Coreopsis tinctoria*, Radius.
- 491. *Coreopsis verticillata*, L.
- 492. *Coreopsis tripteris*, L.
- 493. *Coreopsis discoidea*, Torr. & Gray.
- 494. *Bidens frondosa*, L.

- 495. *Bidens cernua*, L.
- 496. *Bidens chrysanthemoides*, Michx.
- 497. *Bidens bipinnata*, L.
- 498. *Helenium autumnale*, L.
- 499. *Achillea Millefolium*, L.
- 500. *Anthemis arvensis*, L.
- 501. *Maruta Cotula*, DC.
- 502. *Leucanthemum vulgare*, L.
- 503. *Arnica nudicaulis*, Ell.
- 504. *Erechthites hieracifolia*, Raf.
- 505. *Senecio aureus*, L.
- 506. *Senecio aureus*, L., var. *Balsamitæ*, Gray.
- 507. *Cacalia suaveolens*, L.
- 508. *Cacalia reniformis*, Muhl.
- 509. *Cacalia atriplicifolia*, L.
- 510. *Lappa officinalis*, Allioni.
- 511. *Cnicus lanceolatus*, Gray.
- 512. *Cnicus discolor*, Gray.
- 513. *Cnicus altissimus*, Gray.
- 514. *Cnicus arvensis*, Gray.
- 515. *Onopordon acanthium*, L.
- 516. *Centaurea Cyanus*, L.
- 517. *Centaurea Calotropa*, L.
- 518. *Olehorium Intybus*, L.

- 519. *Krigia Virginica*, Willd.
- 520. *Cynthia Dandelion*, DC.
- 521. *Hieracium scabrum*, Michx.
- 522. *Hieracium Gronovii*, L.
- 523. *Hieracium venosum*, L.
- 524. *Hieracium venosum*, L., var. *subcaulescens*, Gray.
- 525. *Hieracium paniculatum*, L.
- 526. *Taraxacum Dens-leonis*, Desf.
- 527. *Chondrilla juncea*, L.
- 528. *Lactuca Canadensis*, L.
- 529. *Lactuca Canadensis*, L., var. *integrifolia*, Torr. & Gray.
- 530. *Mulgedium acuminatum*, DC.
- 531. *Mulgedium Floridanum*, DC.
- 532. *Mulgedium leucophæum*, DC.
- 533. *Nabalus albus*, Hook.
- 534. *Nabalus Fraseri*, DC.
- 535. *Sonchus oleraceus*, L.
- 536. *Sonchus asper*, Vill.
- 537. *Lobelia cardinalis*, L.
- 538. *Lobelia syphilitica*, L.
- 539. *Lobelia puberula*, Michx.
- 540. *Lobelia spicata*, Lam.
- 541. *Lobelia inflata*, L.
- 542. *Specularia perfoliata*, A. DC.

- 543. *Campanula Americana*, L.
- 544. *Gaylussacia dumosa*, Torr. & Gray.
- 545. *Gaylussacia frondosa*, Torr. & Gray.
- 546. *Gaylussacia resinosa*, Torr. & Gray.
- 547. *Vaccinium vacillans*, Solander.
- 548. *Vaccinium stamineum*, L.
- 549. *Vaccinium corymbosum*, L.
- 550. *Epigaea repens*, L.
- 551. *Gaultheria procumbens*, L.
- 552. *Andromeda Mariana*, L.
- 553. *Andromeda ligustrina*, Muhl.
- 554. *Leucothoe racemosa*, Gray.
- 555. *Kalmia latifolia*, L.
- 556. *Kalmia angustifolia*, L.
- 557. *Rhododendron viscosum*, Torr.
- 558. *Rhododendron viscosum*, Torr., var. *glaucum*, Gray
- 559. *Rhododendron viscosum*, Torr., var. *nitidum*, Gray.
- 560. *Rhododendron nudiflorum*, Torr.
- 561. *Rhododendron maximum*, L.
- 562. *Chimaphila umbellata*, Nutt.
- 563. *Chimaphila maculata*, Pursh.
- 564. *Pyrola secunda*, L.
- 565. *Pyrola chlorantha*, Swartz.
- 566. *Pyrola elliptica*, Nutt.

567. *Pyrola rotundifolia*, L.
568. *Monotropa uniflora*, L.
569. *Monotropa Hypopitya*, L.
570. *Dodecatheon Meadia*, L.
571. *Steironema ciliatum*, Raf.
572. *Steironema lanceolatum*, Gray.
573. *Steironema lanceolatum*, var. *hybridum*, Gray.
574. *Steironema longifolium*, Gray.
575. *Lysimachia quadrifolia*, L.
576. *Lysimachia stricta*, Ait.
577. *Lysimachia nummularia*, L.
578. *Anagallis arvensis*, L.
579. *Samolus Valerandi*, L., var. *Americanus*, Gray.
580. *Diospyros Virginiana*, L.
581. *Fraxinus Americana*, L.
582. *Fraxinus pubescens*, Lam.
583. *Fraxinus viridis*, Michx. f.
584. *Chionanthus Virginica*, L.
585. *Vinca minor*, L.
586. *Apocynum cannabinum*, L.
587. *Apocynum cannabinum*, L., var. *glaberrimum*, DC
588. *Asclepias tuberosa*, L.
589. *Asclepias rubra*, L.

- 590. *Asclepias purpurascens*, L.
- 591. *Asclepias incarnata*, L.
- 592. *Asclepias incarnata*, L., var. *pulchra*, Pers
- 593. *Asclepias Cornuti*, Decene.
- 594. *Asclepias obtusifolia*, Michx.
- 595. *Asclepias variegata*, L.
- 596. *Asclepias quadrifolia*, Jacq.
- 597. *Asclepias verticillata*, L.
- 598. *Acerates viridiflora*, Ell.
- 599. *Ensalenia albida*, Nutt.
- 600. *Gonolobus obliquus*, R. Br.
- 601. *Gonolobus hirsutus*, Michx.
- 602. *Sabbatia angularis*, Pursh.
- 603. *Gentiana Saponaria*, L.
- 604. *Gentiana Andrewsii*, Griseb.
- 605. *Gentiana ochroleuca*, Froel.
- 606. *Bartonia tenella*, Muhl.
- 607. *Obolaria Virginica*, L.
- 608. *Phlox paniculata*, L.
- 609. *Phlox maculata*, L.
- 610. *Phlox pilosa*, L.
- 611. *Phlox divaricata*, L.
- 612. *Phlox subulata*, L.
- 613. *Polemonium reptans*, L.

- 614. *Hydrophyllum Virginicum*, L.
- 615. *Ellisia Nyctelea*, L.
- 616. *Phacelia Purshii*, Buckley .
- 617. *Phacelia parviflora*, Pursh.
- 618. *Cynoglossum officinale*, L.
- 619. *Cynoglossum Virginicum*, L.
- 620. *Echinospermum Virginicum*, Lehm.
- 621. *Mertensia Virginica*, DC.
- 622. *Myosotis palustris*, With.
- 623. *Myosotis laxa*, Lehm.
- 624. *Myosotis arvensis*, Hoffm.
- 625. *Myosotis verna*, Nutt.
- 626. *Lithospermum arvense*, L.
- 627. *Lithospermum canescens*, Lehm.
- 628. *Onosmodium Virginianum*, DC.
- 629. *Echium vulgare*, L.
- 630. *Ipomœa coccinea*, L.
- 631. *Ipomœa Nil*, Roth.
- 632. *Ipomœa purpurea*, Lam.
- 633. *Ipomœa pandurata*, Meyer.
- 634. *Ipomœa lacunosa*, L.
- 635. *Convolvulus spithameus*, L.
- 636. *Convolvulus sepium*, L.
- 637. *Convolvulus arvensis*, L.



- 638. *Cuscuta chlorocarpa*, Eng.
- 639. *Cuscuta arvensis*, Beyrich.
- 640. *Cuscuta Gronovii*, Willd.
- 641. *Solanum nigrum*, L.
- 642. *Solanum Carolinense*, L.
- 643. *Physalis pubescens*, L.
- 644. *Physalis viscosa*, L.
- 645. *Nicandra physaloides*, Gaertn.
- 646. *Lycium vulgare*, Duval.
- 647. *Datura Stramonium*, L.
- 648. *Datura Tatula*, L.
- 649. *Verbascum Thapsus*, L.
- 650. *Verbascum Blattaria*, L.
- 651. *Linaria Canadensis*, Dumont.
- 652. *Linaria vulgaris*, Mill.
- 653. *Linaria Elatine*, Mill.
- 654. *Scrophularia nodosa*, L.
- 655. *Chelone glabra*, L.
- 656. *Pentstemon pubescens*, Solander.
- 657. *Pentstemon lævigatus*, Solander.
- 658. *Mimulus ringens*, L.
- 659. *Mimulus alatus*, Solander.
- 660. *Herpestis nigrescens*, Benth.
- 661. *Gratiola Virginiana*, L.

- 662. *Gratiola pilosa*, Michx.
- 663. *Lysanthes gratioloidea*, Benth.
- 664. *Micranthemum Nuttallii*, Gray.
- 665. *Veronica Virginica*, L.
- 666. *Veronica Americana*, Schwein.
- 667. *Veronica scutellata*, L.
- 668. *Veronica officinalis*, L.
- 669. *Veronica serpyllifolia*, L.
- 670. *Veronica peregrina*, L.
- 671. *Veronica arvensis*, L.
- 672. *Buchnera Americana*, L.
- 673. *Gerardia pedicularia*, L.
- 674. *Gerardia flava*, L.
- 675. *Gerardia quercifolia*, Pursh.
- 676. *Gerardia purpurea*, L.
- 677. *Gerardia tenuifolia*, Vahl.
- 678. *Pedicularis Canadensis*, L.
- 679. *Pedicularis lanceolata*, Michx.
- 680. *Melampyrum Americanum*, Michx.
- 681. *Orobanche minor*, L.
- 682. *Aphyllon uniflorum*, Gray.
- 683. *Conopholis Americana*, Wallroth.
- 684. *Epiphegus Virginiana*, Bart.
- 685. *Utricularia vulgaris*, L.

- 686. *Utricularia gibba*, L.
- 687. *Tecoma radicans*, Juss.
- 688. *Catalpa bignonioides*, Walt.
- 689. *Ruellia ciliosa*, Pursh.
- 690. *Ruellia ciliosa*, Pursh, var. *ambigua*, Gray.
- 691. *Ruellia strepens*, L.
- 692. *Dianthera Americana*, L.
- 693. *Phryma Leptostachya*, L.
- 694. *Verbena officinalis*, L.
- 695. *Verbena urticæfolia*, L.
- 696. *Verbena angustifolia*, Michx.
- 697. *Verbena hastata*, L.
- 698. *Lippia lanceolata*, Michx.
- 699. *Trichostema dichotomum*, L.
- 700. *Isanthus cœruleus*, Michx.
- 701. *Teucrium Canadense*, L.
- 702. *Collinsonia Canadensis*, L.
- 703. *Perilla ocimoides*, L., var. *crispa* (Gray?).
- 704. *Mentha viridis*, L.
- 705. *Mentha piperita*, L.
- 706. *Mentha Canadensis*, L.
- 707. *Lycopus Virginicus*, L.
- 708. *Lycopus rubellus*, Moench.
- 709. *Lycopus sinuatus*, Ell.

710. *Cunila Mariana*, L.
711. *Pycnanthemum linifolium*, Pursh.
712. *Pycnanthemum lanceolatum*, Pursh.
713. *Pycnanthemum muticum*, Pers.
714. *Pycnanthemum Torreyi*, Benth.
715. *Pycnanthemum clinopodioides*, Gray.
716. *Pycnanthemum incanum*, Michx.
717. *Calamintha Nepeta*, Link.
718. *Calamintha Clinopodium*, Benth.
719. *Melissa officinalis*, L.
720. *Hedeoma pulegioides*, Pers.
721. *Salvia lyrata*, L.
722. *Salvia urticifolia*, L.
723. *Monarda fistulosa*, L.
724. *Monarda punctata*, L.
725. *Lophanthus nepetoides*, Benth.
- ✓ 726. *Nepeta Cataria*, L.
727. *Nepeta Glechoma*, Benth.
728. *Scutellaria lateriflora*, L.
729. *Scutellaria saxatilis*, Riddell.
730. *Scutellaria serrata*, Andrews.
731. *Scutellaria pilosa*, Michx.
732. *Scutellaria integrifolia*, L.

- 733. *Scutellaria nervosa*, Pursh.
- 734. *Brunella vulgaris*, L.
- 735. *Physostegia Virginiana*, Benth.
- 736. *Marrubium vulgare*, L.
- 737. *Leonurus Cardiaea*, L.
- 738. *Lamium amplexicaule*, L.
- 739. *Stachys palustris*, L.
- 740. *Stachys aspera*, Michx.
- 741. *Plantago cordata*, Lam.
- 742. *Plantago major*, L.
- 743. *Plantago Rugelii*, Decane.
- 744. *Plantago lanceolata*, L.
- 745. *Plantago Patagonica*, Jacq., var. *aristata*, Gray.
- 746. *Plantago Virginica*, L.
- 747. *Amarantus paniculatus*, L.
- 748. *Amarantus retroflexus*, L.
- 749. *Amarantus albus*, L.
- 750. *Amarantus spinosus*, L.
- 751. *Aconida cannabina*, L.
- 752. *Chenopodium album*, L.
- 753. *Chenopodium Boeckianum*, Moq.
- 754. *Chenopodium urbicum*, L.
- 755. *Chenopodium murale*, L.

- 756. *Chenopodium Botrys*, L.
- 757. *Chenopodium ambrosioides*, L.
- 758. *Chenopodium ambrosioides*, L., var. *anthelminticum*, Gray.
- 759. *Atriplex patula*, L., var. *hastata*, Gray.
- 760. *Salsola Kali*, L.
- 761. *Phytolacca decandra*, L.
- 762. *Polygonum orientale*, L.
- 763. *Polygonum Pennsylvanicum*, L.
- 764. *Polygonum incarnatum*, Ell.
- 765. *Polygonum Persicaria*, L.
- 766. *Polygonum Hydropiper*, L.
- 767. *Polygonum acre*, H. B. K.
- 768. *Polygonum hydropiperoides*, Michx.
- 769. *Polygonum amphibium*, L.
- 770. *Polygonum amphibium*, L., var. *terrestre*, Willd.
- 771. *Polygonum Virginianum*, L.
- 772. *Polygonum aviculare*, L.
- 773. *Polygonum erectum*, L.
- 774. *Polygonum arifolium*, L.
- 775. *Polygonum sagittatum*, L.
- 776. *Polygonum Convolvulus*, L.
- 777. *Polygonum dumetorum*, L.
- 778. *Polygonum dumetorum*, L., var. *scandens*, Gray

- 779. *Fagopyrum esculentum*, Moench.
- 780. *Rumex Britannica*, L.
- 781. *Rumex verticillatus*, L.
- 782. *Rumex crispus*, L.
- 783. *Rumex obtusifolius*, L.
- 784. *Rumex crispus* × *obtusifolius*, Gray,
- 785. *Rumex Acetosella*, L.
- 786. *Podostemon ceratophyllus*, Michx.
- 787. *Asarum Canadense*, L.
- 788. *Aristolochia Serpentaria*, L.
- 789. *Saururus cernuus*, L.
- 790. *Sassafras officinale*, Nees.
- 791. *Lindera Benzoin*, Meisner.
- 792. *Dirca palustris*, L.
- 793. *Comandra umbellata*, Nutt.
- 794. *Phoradendron flavescens*, Nutt.
- 795. *Euphorbia maculata*, L.
- 796. *Euphorbia hypericifolia*, L.
- 797. *Euphorbia corollata*, L.
- 798. *Euphorbia Ipecacuanhæ*, L.
- 799. *Euphorbia diotyosperma*, Fischer & Meyer.
- 800. *Euphorbia commutata*, Eng.
- 801. *Phyllanthus Carolinensis*, Walt.

- 802. *Acalypha Virginica*, L.
- 803. *Ricinus communis*, Desf.
- 804. *Ulmus fulva*, Michx.
- 805. *Ulmus Americana*, L.
- 806. *Celtis occidentalis*, L.
- 807. *Humulus Lupulus*, L.
- 808. *Cannabis sativa*, L.
- 809. *Maclura aurantiaca*, Nutt.
- 810. *Morus rubra*, L.
- 811. *Morus alba*, L.
- 812. *Urtica dioica*, L.
- 813. *Laportea Canadensis*, Gaudichaud.
- 814. *Pilea pumila*, Gray.
- 815. *Boehmeria cylindrica*, Willd.
- 816. *Parietaria Pennsylvanica*, Muhl.
- 817. *Platanus occidentalis*, L.
- 818. *Carya alba*, Nutt.
- 819. *Carya microcarpa*, Nutt.
- 820. *Carya tomentosa*, Nutt.
- 821. *Carya porcina*, Nutt.
- 822. *Carya amara*, Nutt.
- 823. *Juglans nigra*, L.
- 824. *Juglans cinerea*, L.



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- 825. *Myrica cerifera*, L.
- 826. *Betula nigra*, L.
- 827. *Alnus serrulata*, Ait.
- 828. *Carpinus Caroliniana*, Walt.
- 829. *Ostrya Virginica*, Willd.
- 830. *Corylus Americana*, Walt.
- 831. *Quercus alba*, L.
- 832. *Quercus stellata*, Wang.
- 833. *Quercus macrocarpa*, Michx.
- 834. *Quercus bicolor*, Willd.
- 835. *Quercus Michauxii*, Nutt.
- 836. *Quercus Prinus*, L.
- 837. *Quercus Muhlenbergii*, Eng.
- 838. *Quercus prinoides*, Willd.
- 839. *Quercus rubra*, L.
- 840. *Quercus coccinea*, Wang.
- 841. *Quercus tinctoria*, Bartram.
- 842. *Quercus falcata*, Michx.
- 843. *Quercus ilicifolia*, Wang.
- 844. *Quercus palustris*, Du Roi.
- 845. *Quercus nigra*, L.
- 846. *Quercus imbricaria*, Michx.
- 847. *Quercus Phellos*, L.

- 848. *Quercus Leana*, Nutt.
- 849. *Quercus heterophylla*, Michx.
- 850. *Castanea pumila*, Mill.
- 851. *Castanea vulgaris*, Lam., var. *Americana*, A. DC.
- 852. *Fagus ferruginea*, Ait.
- 853. *Salix nigra*, Marshall.
- 854. *Salix nigra*, Marshall, var. *falcata*, Carey.
- 855. *Salix nigra*, Marshall, var. *Wardi*, Bebb.
- 856. *Salix fragilis* × *alba*, Wimmer.
- 857. *Salix alba*, L.
- 858. *Salix alba*, L., var. *vitellina*, Koch.
- 859. *Salix Babylonica*, L.
- 860. *Salix longifolia*, Muhl.
- 861. *Salix humilis*, Marshall.
- 862. *Salix tristis*, Ait.
- 863. *Salix sericea*, Marshall.
- 864. *Salix cordata*, Muhl.
- 865. *Salix cordata* × *sericea*, Bebb.
- 866. *Salix purpurea*, L.
- 867. *Populus grandidentata*, Michx.
- 868. *Populus monilifera*, Ait.
- 869. *Populus balsamifera*, L., var. *candicans*, Gray.
- 870. *Populus dilatata*, Ait.

- 871. *Populus alba*, L.
- 872. *Ceratophyllum demersum*, L.
- 873. *Arisaema triphyllum*, Torr.
- 874. *Arisaema Dracontium*, Schott.
- 875. *Peltandra Virginica*, Raf.
- 876. *Symplocarpus foetidus*, Salisb.
- 877. *Orontium aquaticum*, L.
- 878. *Acorus Calamus*, L.
- 879. *Lemna polyrrhiza*, L.
- 880. *Typha latifolia*, L.
- 881. *Typha angustifolia*, L.
- 882. *Sparganium eurycarpum*, Eng.
- 883. *Sparganium simplex*, Hudson, var. *androcladum*, Gray.
- 884. *Najas flexilis*, Rostk.
- 885. *Potamogeton natans*, L.
- 886. *Potamogeton Claytonii*, Tuckerm.
- 887. *Potamogeton hybridus*, Michx.
- 888. *Potamogeton lonchites*, Tuckerm.
- 889. *Potamogeton lucens*, L.
- 890. *Potamogeton perfoliatus*, L.
- 891. *Potamogeton pauciflorus*, Pursh.
- 892. *Potamogeton pectinatus*, L.
- 893. *Alisma Plantago*, L., var. *Americanum*, Gray.

894. *Sagittaria variabilis*, Eng.
895. *Sagittaria variabilis*, Eng., var. *angustifolia*, Gray.
896. *Sagittaria heterophylla*, Pursh.
897. *Sagittaria pusilla*, Nutt.
898. *Anacharis Canadensis*, Planchon.
899. *Vallisneria spiralis*, L.
900. *Orchis spectabilis*, L.
901. *Habenaria tridentata*, Hook.
902. *Habenaria virescens*, Spreng.
903. *Habenaria ciliaris*, R. Br.
904. *Habenaria lacera*, R. Br.
905. *Goodyera pubescens*, R. Br.
906. *Spiranthes latifolia*, Torr.
907. *Spiranthes cernua*, Richard.
908. *Spiranthes graminea*, Lindl., var. *Walteri*, Gray.
909. *Spiranthes gracilis*, Bigelow.
910. *Spiranthes simplex*, Gray.
911. *Pogonia ophioglossoides*, Nutt.
912. *Pogonia verticillata*, Nutt.
913. *Calopogon pulchellus*, R. Br.
914. *Tipularia discolor*, Nutt.
915. *Microstylis ophioglossoides*, Nutt.
916. *Liparis lilifolia*, Richard

- 917. *Liparis Lesseli*, Richard.
- 918. *Corallorhiza odontorhiza*, Nutt.
- 919. *Corallorhiza multiflora*, Nutt.
- 920. *Aplectrum hyemale*, Nutt.
- 921. *Cypripedium parviflorum*, Salisb.
- 922. *Cypripedium pubescens*, Willd.
- 923. *Cypripedium acaule*, Ait.
- 924. *Hypoxys erecta*, L.
- 925. *Aletris farinosa*, L.
- 926. *Iris versicolor*, L.
- 927. *Iris verna*, L.
- 928. *Iris cristata*, Ait.
- 929. *Pardanthus Chinensis*, Koe.
- 930. *Sisyrinchium anceps*, L.
- 931. *Sisyrinchium mucronatum*, Michx.
- 932. *Dioscorea villosa*, L.
- 933. *Smilax rotundifolia*, L.
- 934. *Smilax glauca*, Walt.
- 935. *Smilax hispida*, Muhl.
- 936. *Smilax Pseudo-China*, L.
- 937. *Smilax herbacea*, L.
- 938. *Smilax tamnifolia*, Michx.
- 939. *Allium tricoccum*, Ait.

- 940. *Allium cernuum*, Roth.
- 941. *Allium Canadense*, Kalm.
- 942. *Allium vineale*, L.
- 943. *Polygonatum biflorum*, Ell.
- 944. *Polygonatum giganteum*, Dietrich.
- 945. *Smilacina racemosa*, Desf.
- 946. *Smilacina stellata*, Desf.
- 947. *Maianthemum Canadense*, Desf.
- 948. *Asparagus officinalis*, L.
- 949. *Lilium superbum*, L.
- 950. *Erythronium Americanum*, Smith.
- 951. *Erythronium albidum*, Nutt.
- 952. *Uvularia perfoliata*, L.
- 953. *Oakesia sessilifolia*, Watson.
- 954. *Medeola Virginica*, L.
- 955. *Trillium sessile*, L.
- 956. *Melanthium Virginicum*, L.
- 957. *Veratrum viride*, Ait.
- 958. *Stenanthium robustum*, Watson.
- 959. *Chamælrirum Carolinianum*, Willd.
- 960. *Tofieldia pubens*, Pers.
- 961. *Ornithogalum umbellatum*, L.
- 962. *Muscari botryoides*, Mill.

- 963. *Hemerocallis fulva*, L.
- 964. *Luzula campestris*, DC.
- 965. *Juncus effusus*, L.
- 966. *Juncus tenuis*, Willd.
- 967. *Juncus tenuis*, Willd., var. *secundus*, Eng.
- 968. *Juncus dichotomus*, Ell.
- 969. *Juncus Gerardi*, Lois.
- 970. *Juncus bufonius*, L.
- 971. *Juncus marginatus*, Rostk.
- 972. *Juncus marginatus*, Rostk., var. *vulgaris*, Eng.
- 973. *Juncus marginatus*, Rostk., var. *biflorus*, Eng.
- 974. *Juncus acuminatus*, Michx., var. *legitimus*, Eng.
- 975. *Juncus scirpoides*, Lam., var. *macrostemon*, Eng.
- 976. *Juncus nodosus*, L., var. *megacephalus*, Eng.
- 977. *Juncus Canadensis*, Gay, var. *subcaudatus*, Eng.
- 978. *Juncus Canadensis*, Gay, var. *longicaudatus*, Eng.
- 979. *Pontederia cordata*, L.
- 980. *Heteranthera reniformis*, Ruiz & Pav.
- 981. *Schollera graminea*, Willd.
- 982. *Commelina erecta*, L.
- 983. *Commelina Virginica*, L.
- 984. *Tradescantia Virginica*, L.
- 985. *Xyris flexuosa*, Muhl.

- 986. *Eriocaulon decangulare*, L.
- 987. *Cyperus diandrus*, Torr.
- 988. *Cyperus diandrus*, var. *castaneus*, Torr.
- 989. *Cyperus Nuttallii*, Torr.
- 990. *Cyperus erythrorhizos*, Muhl.
- 991. *Cyperus virens*, Michx.
- 992. *Cyperus phymatodes*, Muhl.
- 993. *Cyperus strigosus*, L.
- 994. *Cyperus Michauxianus*, Schultes.
- 995. *Cyperus filiculmis*, Vahl.
- 996. *Cyperus Lancastriensis*, Porter.
- 997. *Cyperus ovularis*, Torr.
- 998. *Cyperus retrofractus*, Torr.
- 999. *Dulichium spathaceum*, Pers.
- 1000. *Fuirena squarrosa*, Michx.
- 1001. *Eleocharis quadrangulata*, R. Br.
- 1002. *Eleocharis obtusa*, Schultes.
- 1003. *Eleocharis palustris*, R. Br.
- 1004. *Eleocharis compressa*, Sulliv.
- 1005. *Eleocharis tenuis*, Schultes.
- 1006. *Eleocharis acicularis*, R. Br.
- 1007. *Scirpus planifolius*, Muhl.
- 1008. *Scirpus pungens*, Vahl.



- 1009. *Scirpus validus*, Vahl.
- 1010. *Scirpus debilis*, Pursh.
- 1011. *Scirpus fluviatilis*, Gray.
- 1012. *Scirpus sylvaticus*, L.
- 1013. *Scirpus atrovirens*, Muhl.
- 1014. *Scirpus polyphyllus*, Vahl.
- 1015. *Scirpus lineatus*, Michx.
- 1016. *Scirpus Eriophorum*, Michx.
- 1017. *Eriophorum Virginicum*, L.
- 1018. *Fimbristylis autumnalis*, Roem. & Schultes.
- 1019. *Fimbristylis capillaris*, Gray.
- 1020. *Rhynchospora alba*, Vahl.
- 1021. *Rhynchospora glomerata*, Vahl.
- 1022. *Scleria triglomerata*, Vahl.
- 1023. *Scleria oligantha*, Ell.
- 1024. *Scleria pauciflora*, Muhl.
- 1025. *Carex polytrichoides*, Muhl.
- 1026. *Carex Willdenovii*, Schk.
- 1027. *Carex Steudellii*, Kunth.
- 1028. *Carex bromoides*, Schk.
- 1029. *Carex decomposita*, Muhl.
- 1030. *Carex vulpinoidea*, Michx.
- 1031. *Carex stipata*, Muhl.

1032. *Carex sparganioides*, Muhl.
1033. *Carex cephalophora*, Muhl.
1034. *Carex cephalophora*, Muhl., var. *angustifolia*, Boott.
1035. *Carex Muhlenbergii*, Schk.
1036. *Carex rosea*, Schk.
1037. *Carex rosea*, Schk., var. *minor*, Boott.
1038. *Carex stellulata*, L.
1039. *Carex scoparia*, Schk.
1040. *Carex lagopodioides*, Schk.
1041. *Carex cristata*, Schw.
1042. *Carex fenea*, Willd.
1043. *Carex straminea*, Schk.
1044. *Carex straminea*, Schk., var. *tenera*, Boott.
1045. *Carex straminea*, Schk., var. *aperta*, Boott.
1046. *Carex vulgaris*, Fries.
1047. *Carex torta*, Boott.
1048. *Carex angustata*, Boott.
1049. *Carex crinita*, Lam.
1050. *Carex gynandra*, Schw.
1051. *Carex Shortiana*, Dew.
1052. *Carex tetanica*, Schk.
1053. *Carex tetanica*, Schk., var. *Woodii*, Olney
1054. *Carex granularis*, Muhl.

- 1055. *Carex glaucoidea*, Porter.
- 1056. *Carex pallescens*, L.
- 1057. *Carex pallescens*, L., var. *undulata*, Gray.
- 1058. *Carex grisea*, Wahl.
- 1059. *Carex gracillima*, Schw.
- 1060. *Carex virescens*, Muhl.
- 1061. *Carex virescens*, Muhl., var. *elliptica*, Olney.
- 1062. *Carex tricoeps*, Michx.
- 1063. *Carex platyphylla*, Carey.
- 1064. *Carex Careyana*, Torr.
- 1065. *Carex retrocurva*, Dew.
- 1066. *Carex digitalis*, Willd.
- 1067. *Carex laxiflora*, Lam.
- 1068. *Carex laxiflora*, Lam., var. *styloflexa*, Boott.
- 1069. *Carex laxiflora*, Lam., var. *plantaginea*, Boott.
- 1070. *Carex laxiflora*, Lam., var. *intermedia*, Boott.
- 1071. *Carex laxiflora*, Lam., var. *blanda*, Sulliv.
- 1072. *Carex laxiflora*, Lam., var. *gracillima*, Boott.
- 1073. *Carex Hitchcockiana*, Dew.
- 1074. *Carex oligocarpa*, Schk.
- 1075. *Carex umbellata*, Schk.
- 1076. *Carex Emmonsii*, Dew.
- 1077. *Carex nigro-marginata*, Schw.  
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1078. *Carex Pennsylvanica*, Lam.
1079. *Carex varia*, Muhl.
1080. *Carex pubescens*, Muhl.
1081. *Carex millacea*, Muhl.
1082. *Carex debilis*, Michx.
1083. *Carex vestita*, Willd.
1084. *Carex riparia*, Curtis.
1085. *Carex comosa*, Boott.
1086. *Carex Pseudo-Cyperus*, L.
1087. *Carex hystrioides*, Willd.
1088. *Carex tentaculata*, Muhl.
1089. *Carex intumescens*, Rudge.
1090. *Carex lupulina*, Muhl.
1091. *Carex folliculata*, L.
1092. *Carex squarrosa*, L.
1093. *Carex stenolepis*, Torr.
1094. *Carex bullata*, Schk.
1095. *Leersia Virginica*, Willd.
1096. *Leersia oryzoides*, Swartz.
1097. *Zizania aquatica*, L.
1098. *Alopecurus geniculatus*, L.
1099. *Alopecurus geniculatus*, L., var. *aristulatus*, Steud.
1100. *Phleum pratense*, L.

- 1101. *Vilfa aspera*, Beauv.
- 1102. *Agrostis perennans*, Tuckerm.
- 1103. *Agrostis scabra*, Willd.
- 1104. *Agrostis vulgaris*, With.
- 1105. *Agrostis alba*, L.
- 1106. *Cinna arundinacea*, L.
- 1107. *Muhlenbergia sobolifera*, Trin.
- 1108. *Muhlenbergia Mexicana*, Trin.
- 1109. *Muhlenbergia sylvatica*, Torr. & Gray.
- 1110. *Muhlenbergia Willdenovii*, Trin.
- 1111. *Muhlenbergia diffusa*, Schreh.
- 1112. *Muhlenbergia capillaris*, Kunth.
- 1113. *Brachyelytrum aristatum*, Beauv.
- 1114. *Calamagrostis Nuttalliana*, Steud.
- 1115. *Stipa avenacea*, L.
- 1116. *Aristida dichotoma*, Michx.
- 1117. *Aristida gracilis*, Ell.
- 1118. *Aristida oligantha*, Michx.
- 1119. *Aristida purpurascens*, Poir.
- 1120. *Spartina cynosuroides*, Willd.
- 1121. *Gymnopogon racemosus*, Beauv.
- 1122. *Cynodon Dactylon*, Pers.
- 1123. *Eleusine Indica*, Gaertn.

- 1124. *Tricuspis seslerioides*, Torr.
- 1125. *Dactylis glomerata*, L.
- 1126. *Eatonia Pennsylvanica*, Gray.
- 1127. *Melica mutica*, Walt.
- 1128. *Glyceria nervata*, Trin.
- 1129. *Glyceria aquatica*, Smith.
- 1130. *Glyceria fluitans*, R. Br.
- 1131. *Poa annua*, L.
- 1132. *Poa compressa*, L.
- 1133. *Poa compressa*, L., var. *gracilis* (Oakes?).
- 1134. *Poa pratensis*, L.
- 1135. *Poa trivialis*, L.
- 1136. *Poa sylvestris*, Gray.
- 1137. *Poa flexuosa*, Muhl.
- 1138. *Poa brevifolia*, Muhl.
- 1139. *Eragrostis reptans*, Nees.
- 1140. *Eragrostis poaeoides*, Beauv.
- 1141. *Eragrostis poaeoides*, Beauv., var. *megastachya*, Gray.
- 1142. *Eragrostis Frankii*, Meyer.
- 1143. *Eragrostis Purshii*, Schrad. (?)
- 1144. *Eragrostis capillaris*, Nees.
- 1145. *Eragrostis pectinacea*, Gray.
- 1146. *Festuca Myurus*, L.

1147. *Festuca tenella*, Willd.

1148. *Festuca ovina*, L.

1149. *Festuca elatior*, L.

1150. *Festuca nutans*, Willd.

1151. *Bromus secalinus*, L.

1152. *Bromus racemosus*, L.

1153. *Bromus mollis*, L.

1154. *Bromus ciliatus*, L.

1155. *Bromus ciliatus*, L., var. *purgans*, Gray.

1156. *Bromus sterilis*, L.

1157. *Uniola latifolia*, Michx.

1158. *Uniola gracilis*, Michx.

1159. *Lolium perenne*, L.

1160. *Triticum repens*, L.

1161. *Elymus Virginicus*, L.

1162. *Elymus Canadensis*, L.

1163. *Elymus striatus*, Willd.

1164. *Elymus striatus*, Willd., var. *villosus*, Gray.


1165. *Gymnostichum Hystrix*, Schreb.

1166. *Danthonia spicata*, Beauv.

1167. *Trisetum palustre*, Torr.

1168. *Aira flexuosa*, L.

1169. *Aira corypholles*, L.

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1175. *Panicum filiforme*, L.
1176. *Panicum sanguinale*, L.
1177. *Panicum anceps*, Michx.
1178. *Panicum agrostoides*, Spreng.
1179. *Panicum proliferum*, Lam.
1180. *Panicum capillare*, L.
1181. *Panicum virgatum*, L.
1182. *Panicum latifolium*, L.
1183. *Panicum latifolium*, L., var. *molle*, Vasey. n. v.
1184. *Panicum clandestinum*, L.
1185. *Panicum microcarpon*, Muhl.
1186. *Panicum viscidum*, Ell.
1187. *Panicum pauciflorum*, Ell.
1188. *Panicum dichotomum*, L.



- 1194. *Setaria glauca*, Beauv.
- 1195. *Setaria viridis*, Beauv.
- 1196. *Cenchrus tribuloides*, L.
- 1197. *Tripsacum dactyloides*, L.
- 1198. *Erianthus alopecuroides*, Ell.
- 1199. *Andropogon furcatus*, Muhl.
- 1200. *Andropogon scoparius*, Michx.
- 1201. *Andropogon argenteus*, Ell.
- 1202. *Andropogon Virginicus*, L.
- 1203. *Andropogon macrourus*, Michx.
- 1204. *Sorghum nutans*, Gray.
- 1205. *Juniperus Virginiana*, L.
- 1206. *Pinus rigida*, Miller.
- 1207. *Pinus pungens*, Michx.
- 1208. *Pinus inops*, Ait.
- 1209. *Pinus mitis*, Michx.
- 1210. *Pinus Strobus*, L.
- 1211. *Tsuga Canadensis*, Carrière.
- 1212. *Equisetum arvense*, L.
- 1213. *Equisetum hyemale*, L.
- 1214. *Polypodium vulgare*, L.
- 1215. *Cheilanthes vestita*, Swartz.
- 1216. *Pellaea atropurpurea*, Link.

- 1217. *Pteris aquilina*, L.
- 1218. *Adiantum pedatum*, L.
- 1219. *Woodwardia angustifolia*, Smith.
- 1220. *Woodwardia Virginica*, Smith.
- 1221. *Asplenium Trichomanes*, L.
- 1222. *Asplenium ebeneum*, Ait.
- 1223. *Asplenium angustifolium*, Michx.
- 1224. *Asplenium thelypteroides*, Michx.
- 1225. *Asplenium Filix-fœmina*, Bernh.
- 1226. *Camptosorus rhizophyllus*, Link.
- 1227. *Phegopteris hexagonoptera*, Fee.
- 1228. *Aspidium Noveboracense*, Swartz.
- 1229. *Aspidium Thelypteris*, Swartz.
- 1230. *Aspidium cristatum*, Swartz.
- 1231. *Aspidium Goldianum*, Hook.
- 1232. *Aspidium Filix-mas*, Swartz.
- 1233. *Aspidium marginale*, Swartz.
- 1234. *Aspidium spinulosum*, Swartz, var. *intermedium*, Willd.
- 1235. *Aspidium acrostichoides*, Swartz.
- 1236. *Cystopteris fragilis*, Bernh.
- 1237. *Onoclea sensibilla*, L.
- 1238. *Woodsia obtusa*, Torr.
- 1239. *Dicksonia pilosiuscula*, Willd.

- 1240. *Lygodium palmatum*, Swartz.
- 1241. *Osmunda regalis*, L.
- 1242. *Osmunda Claytoniana*, L.
- 1243. *Osmunda cinnamomea*, L.
- 1244. *Botrychium ternatum*, Swartz, var. *obliquum*, Milde.
- 1245. *Botrychium ternatum*, Swartz, var. *dissectum*, Milde.
- 1246. *Botrychium Virginianum*, Swartz.
- 1247. *Ophioglossum vulgatum*, L.
- 1248. *Lycopodium lucidulum*, Michx.
- 1249. *Lycopodium dendroideum*, Michx.
- 1250. *Lycopodium complanatum*, L.
- 1251. *Lycopodium complanatum*, L., var. *sabinæfolium*, Spring.
- 1252. *Selaginella rupestris*, Spring.
- 1253. *Selaginella apua*, Spring.
- 1254. *Sphagnum cymbifolium*, Dill.
- 1255. *Sphagnum squarrosum*, Pers.
- 1256. *Sphagnum acutifolium*, Ehrh.
- 1257. *Sphagnum cuspidatum*, Ehrh.
- 1258. *Andræa rupestris*, Turner.
- 1259. *Phascum sessile*, Br. & Sch.
- 1260. *Phascum coheserens*, Hedw.
- 1261. *Phascum triquetrum*, Spruce.
- 1262. *Phascum cuspidatum*, Schreb.

- 1263. *Phascum alternifolium*, Brid.
- 1264. *Phascum subulatum*, Schreb.
- 1265. *Phascum Sullivantii*, Schimp.
- 1266. *Bruchia flexuosa*, Schwaegr.
- 1267. *Weisia viridula*, Brid.
- 1268. *Trematodon longicollis*, Rich.
- 1269. *Dicranum varium*, Hedw.
- 1270. *Dicranum heteromallum*, Hedw.
- 1271. *Dicranum scoparium*, L.
- 1272. *Ceratodon purpureus*, Brid.
- 1273. *Leucobryum glaucum*, Hampe
- 1274. *Leucobryum minus*, Hampe.
- 1275. *Fissidens minutulus*, Sulliv.
- 1276. *Fissidens osmundioides*, Hedw.
- 1277. *Trichostomum pallidum*, Hedw.
- 1278. *Trichostomum glaucescens*, Hedw.
- 1279. *Barbula unguiculata*, Hedw.
- 1280. *Barbula caespitosa*, Schwaegr.
- 1281. *Pottia truncata*, Br. & Sch.
- 1282. *Tetraphis pellucida*, Hedw.
- 1283. *Drummondia clavellata*, Hook.
- 1284. *Orthotrichum Canadense*, Br. & Sch.
- 1285. *Schistidium apocarpum*, Br. & Sch.

- 1286. *Grimmia Pennsylvanica*, Schwaegr.
- 1287. *Racomitrium fasciculare*, Brid.
- 1288. *Hedwigia ciliata*, Ehrh.
- 1289. *Diphyscium foliosum*, Web. & Mohr.
- 1290. *Atrichum undulatum*, Beauv.
- 1291. *Atrichum angustatum*, Beauv.
- 1292. *Pogonatum brevicaule*, Brid.
- 1293. *Pogonatum urnigerum*, Brid.
- 1294. *Polytrichum commune*, L.
- 1295. *Polytrichum juniperinum*, Hedw.
- 1296. *Aulacomnium heterostichum*, Br. & Sch.
- 1297. *Bryum pyriforme*, Hedw.
- 1298. *Bryum Wahlenbergii*, Schwaegr.
- 1299. *Bryum argenteum*, L.
- 1300. *Bryum pseudo-triquetrum*, Schwaegr.
- 1301. *Bryum caespitium*, L.
- 1302. *Mnium stellare*, Hedw.
- 1303. *Mnium Drummondii*, Br. & Sch.
- 1304. *Mnium cuspidatum*, Hedw.
- 1305. *Bartramia pomiformis*, Hedw.
- 1306. *Bartramia fontana*, Brid.
- 1307. *Funaria hygrometrica*, Hedw.
- 1308. *Physcomitrium pyriforme*, Br. & Sch.

- 1309. *Physcomitrium hians*, Lind.
- 1310. *Fontinalis biformis*, Sulliv.
- 1311. *Leucodon julaceus*, Sulliv.
- 1312. *Dichelyma subulatum*, Myrin.
- 1313. *Leptodon trichomitrium*, Mohr.
- 1314. *Anomodon attenuatus*, Hub.
- 1315. *Leskea obscura*, Hedw.
- 1316. *Leskea rostrata*, Hedw.
- 1317. *Thelia hirtella*, (Hedw.) Sulliv.
- 1318. *Thelia asprella*, (Schimp.) Sulliv.
- 1319. *Pylaissea intricata*, Bryol. Europ.
- 1320. *Platygyrium repens*, Bryol. Europ.
- 1321. *Cylindrothecium cladorrhizans*, Bryol. Europ.
- 1322. *Cylindrothecium seductrix*, Bryol. Europ.
- 1323. *Climacium Americanum*, Brid.
- 1324. *Hypnum tamariscinum*, Hedw.
- 1325. *Hypnum triquetrum*, L.
- 1326. *Hypnum splendens*, Hedw.
- 1327. *Hypnum hians*, Hedw.
- 1328. *Hypnum Sullivantii*, Spruce.
- 1329. *Hypnum strigosum*, Hoffm.
- 1330. *Hypnum piliferum*, Schreb.
- 1331. *Hypnum Boscii*, Schwaegr.

- 1332. *Hypnum serrulatum*, Hedw.
- 1333. *Hypnum deplanatum*, Sch.
- 1334. *Hypnum rusciforme*, Weis.
- 1335. *Hypnum recurvum*, Schwaegr.
- 1336. *Hypnum Schreberi*, Willd.
- 1337. *Hypnum stramineum*, Dickson.
- 1338. *Hypnum uncinatum*, Hedw.
- 1339. *Hypnum fuitans*, L.
- 1340. *Hypnum cupressiforme*, L.
- 1341. *Hypnum curvifolium*, Hedw.
- 1342. *Hypnum pratense*, Koch.
- 1343. *Hypnum salebrosum*, Hoffm.
- 1344. *Hypnum laetum*, Brid.
- 1345. *Hypnum hispidulum*, Brid.
- 1346. *Hypnum radicale*, Brid.
- 1347. *Hypnum orthocladon*, Beauv.
- 1348. *Hypnum riparium*, Hedw.
- 1349. *Hypnum Lescurii*, Sulliv.
- 1350. *Hypnum fulvum*, Hook. & Wila.
- 1351. *Hypnum sylvaticum*, L.
- 1352. *Riccia lutescens*, Schw.
- 1353. *Anthoceros punctatus*, L.
- 1354. *Marchantia polymorpha*, L.

1355. *Pegatella conica*, Corda.
1356. *Metzgeria furcata*, Nees.
1357. *Aneura palmata*, Nees.
1358. *Steetzia Lyellii*, Lehm.
1359. *Pellia epiphylla*, Nees.
1360. *Geocalyx graveolens*, Nees.
1361. *Chiloscyphus polyanthos*, Corda.
1362. *Lophocolea bidentata*, Nees.
1363. *Jungermannia trichophylla*, L.
1364. *Jungermannia setacea*, Weber.
1365. *Jungermannia connivens*, Dickson.
1366. *Jungermannia Schraderi*, Martius.
1367. *Scapania nemorosa*, Nees.
1368. *Plagiochila spinulosa*, Nees & Montagne
1369. *Plagiochila asplenoides*, Nees & Montagne
1370. *Frullania Grayana*, Montagne.
1371. *Frullania Virginica*, Lehm.
1372. *Frullania Eboracensis*, Lehm.
1373. *Lejeunia cucullata*, Nees.
1374. *Madotheca platyphylla*, Dumort.
1375. *Radula complanata*, Dumort.
1376. *Ptilidium ciliare*, Nees.
1377. *Triphocolea Tomentella*, Nees.



1378. *Mastigobryum tridenticulatum*, Lindenb.

1379. *Lepidosia reptans*, Nees.

1380. *Calypogeia Trichomania*, Corda.

1381. *Nitella flexilis*, L.

1382. *Nitella tenuissima*, Desv.

1383. *Chara polyphylla*, var. *Michauxii*, Al. Braun.

1384. *Chara Hydropithys*, Al. Braun



## APPENDIX.

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### SUGGESTIONS TO BEGINNERS.

More fully to complete the primary design of this little work, viz., that of making it serve as a guide to collectors in the vicinity of Washington, I have deemed it appropriate to append to the foregoing catalogue and introductory remarks a very condensed description of the methods of collecting and preserving botanical specimens. It is probable that besides the occasional visits of botanists from other parts of the country, and those who may hereafter remove from other places to Washington and desire to continue, as all botanists do, their herborizations in their new home, for which two classes this treatise has been chiefly designed, there will in the future be some, and it is to be hoped many, who will commence their botanical career in this place, and for whom, therefore, this Appendix may possess a certain value. Should the effort to introduce botany into the public schools be seriously made and persevered in, an interest in the local flora will be rapidly awakened among the resident population, and there will exist a demand for some work bearing especially upon it, and also for a treatise on the art of collecting. It may be said that directions and instructions of this kind already exist, and are to be found in nearly all the school manuals. This is true, and yet I think no experienced collector will gainsay the statement that the greater part of the instructions given in text-books are soon disregarded as impracticable, and different, though far from uniform, methods are adopted by practical botanists. It is not my purpose, nor would space permit me, to criticise these book-systems, or to compare them with the one here recommended. This any one may do for himself. I propose simply to explain a practical method, but latitudinarian in scope, which, if followed more or less closely, will yield satisfactory results. This may be and is widely varied in its details, but in its general character it can be regarded as the accepted method of most botanists of field experience. To avoid too lengthy and profuse explanations, I shall in the main confine my suggestions to

the line of operation which considerable experience and the temporary adoption of numerous different methods have finally convinced me to be upon the whole the best, although the circumstances may often so vary as to render considerable modification advisable. Such modifications will, however, usually suggest themselves, and choice methods will occasionally be introduced as equally advantageous or widely in use.

#### I.—IDENTIFICATION OF PLANTS.

I place the identification before the collection of plants because for the beginner it should be chronologically the first thing done. Not that plants are to be studied altogether *in situ* without removing them from their natural attachments to the soil, for this can be done without properly *collecting* them. The term "collection" should be regarded as a technical one, and by no means the same thing as the mere gathering of flowers. It is an *art*, like every other step in practical botany, and requires skill, which is greatly increased by experience; and here the general advice may be given to beginners in botany not to attempt to make a collection of plants the first year, and perhaps not the second. Those who begin by trying to preserve everything they get from the first, usually find after a few years of experience that they have wasted much time and labor, as well as money, for a well-arranged herbarium is a source of considerable expense. They find that they have lost time in drying and mounting specimens which are sure to be, if retained, an eye-sore to their better educated taste, and which they nevertheless feel loth to throw away along with the sheets to which they are attached, after having devoted so much time and labor to their preservation. Mistakes of this kind will inevitably occur as a necessary part of experience in learning, but a large portion of the waste which they occasion can be avoided by a little patience in the commencement of the work.

It is, of course, a good plan to do as large a part as possible of the work of analyzing flowers in the field, where they may be examined in their natural state of turgescence and with all their organs in their functional positions. In this condition the relations of the parts may be much more clearly seen, and the whole work of identification is greatly simplified. But it is never possible to do everything in this way. Few have the leisure to spend whole days in the country for the study of flowers, and if any had there would still be parts of the work which could be much better done in a quiet room surrounded by the

requisite appliances, even where it is necessary to work at wilted and compressed specimens.

I need not say that a good microscope is indispensable, or repeat the caution about supposing that a high power is required. It is well to have one with two or three lenses of different powers, and which may be combined for very minute objects. What is known as the "Gray microscope" is amply sufficient, and with certain improvements is about all that is needed for systematic analysis. It should always be carried in the pocket, separated, if need be, from the box that it comes in, and which is used as a stand. Every botanist should have a pocket made expressly for his glass, and should never be without it wherever he may be. It is a great advantage to have a surface of some considerable extent in front of the stand for the instrument and on a level with the slide on which the object is to be placed. This is secured in the simplest manner by laying down a book of the right thickness and using a large piece of tin or sheet-iron in place of the glass slide usually provided. Upon this a whole plant of considerable size may be placed, and the portion to be investigated brought under the glass. The steel needles with handles, which usually accompany microscopes of this class, are useful, but if broken or lost an excellent substitute is a thorn, either from the cockspur thorn (*Crataegus Crus-galli*), or from the honey locust (*Gleditsia triacanthos*). These wooden needles have the advantage over steel ones that when wet they do not so persistently pick up the small seeds, etc., which it is desired to put into position.

A young botanist's struggles with botanical keys can only be sympathized with; they can scarcely be aided by any general directions, and there is no more effectual drill than the persevering effort to identify, by the aid of a key, a plant to which he has no clew. It should be the ambition of every such beginner to analyze in this manner all the plants of his local flora. The more aid he receives from those who already know their names and tell them to him, the more superficial will his knowledge of botany be. It is the duty of his teacher, if he has one, to give such suggestions as will guide him over the worst obstacles and prevent discouragement, but he should never be told what his plant is. In finding out the name of a plant for himself he must necessarily learn much of its nature, and this information he will never again take the trouble to acquire after he has once come into possession of the object sought, *i. e.*, its name. When he has learned this he imagines that he *knows what the plant is*, and yet he does not really know what it is until

He has studied its parts and through this real knowledge of the plant obtained the comparatively unimportant knowledge of its name; and thus we reach the paradox that the more ignorant the beginner is at the outset, and the less he is helped, the better will be his ultimate acquaintance with botany if he perseveres in the work.

## 2.—COLLECTION OF PLANTS.

As already remarked, it is an art to collect plants properly. As regards their collection, plants may be divided into two general classes: herbaceous and shrubby plants. All herbs of moderate size and height should be collected entire. It is not sufficient to break or cut them off at such a point on the stem as will insure a specimen of the proper length. Every part of a plant has a character of its own and one which should be represented in the collection. The leaves of most herbs vary in form at different points on the stem, and the same is generally true of the degree of pubescence, which is a character of the first importance. Even the dead leaves about the base are distinctive and should never be torn off. If radical leaves exist, they should be collected with great care, and to secure these it is often necessary to collect them at a different time of the season from that in which the flowers are obtained. No part of the plant is more characteristic than its root. It must not be forgotten that every plant, except epiphytes and parasites, has a subterranean as well as an aerial portion, and where only one is exhibited but half of the plant is represented. Of course there are many plants, even herbaceous ones, whose roots cannot be reduced to dimensions adapted to a herbarium, but wherever it is possible, the entire specimen, root and stem, should be secured. Much larger plants may be thus collected than is often supposed possible, as will be explained presently.

For large herbs with spreading branches the best that can be done is to collect the flowering portions in specimens of suitable size and supplement them with leaves selected from lower parts of the stem.

As regards shrubby plants and trees, the flower and leaf-bearing twigs should be collected, and if the leaves vary on different parts of the plant the different forms should be collected. Occasionally it is desirable to strip off a portion of the bark as a distinctive part of the species in question.

The representative parts of every plant are flowers, fruit, and leaves, and no specimen can be regarded as complete without all these parts.

Often, as in many *Cruciferae*, all these can be found combined in the same specimen at once, but in most cases it requires at least two separate collections at different times in the season. Where fruit can be found attached to the stem and leaves, this is of course the preferable way, since it leaves no possible doubt as to the identity of both. This should therefore be done as long as the size of the fruit will permit, and is recommended in the case of all acorns, and even in hickory-nuts. In the case of larger fruits, such as the walnut, the crab-apple, or the persimmon, the fruit can be collected separately, properly labeled, and kept in drawers or boxes.

The essential apparatus for collecting consists of a portfolio and a small garden trowel. In place of the latter a very large, stout knife may be used, but the results are far less satisfactory. The former is quite indispensable. The traditional tin box of the school books is now generally rejected except for mosses and certain aquatics, when it is made to carry over the shoulder by means of a strap. The beginner will have no use for it. Portfolios are variously made, usually 12 by 18 inches in size and admitting of being expanded to the thickness of 3 or 4 inches, and having handles with which to carry them in the hand, and often also straps and buckles for carrying them over the shoulders. They should be partially filled with paper, which, when once folded, shall be of nearly the same size as the portfolio, either sewed to the back or held there by some other device. Various attempts have been made to invent a suitable form of portfolio, some of which embody valuable suggestions, but the greater part of which are specious impostures calculated to tempt the uninitiated, who, after having invested in them, throw them aside the next season for something more simple and practical. Nothing can be more ridiculous than some of these patent impositions which are widely advertised and puffed in the newspapers and even in scientific periodicals. I have one in mind now which, among other absurdities, had arrangements for the systematic classification and permanent labeling of the specimens as soon as collected! No attempt need be made to keep a portfolio genteel, especially within. By the time it has been well filled out a few times with moist plants and muddy roots, all the fancy paper that is put into it will have lost its charm. No delusion is greater, either, than that, by having wire for the sides, or no matter how bibulous paper inside, the necessity for taking the plants out of the portfolio and putting them through the regular process of drying can be obviated. Those who believe these things merely ruin a few col-

lections, and awake to the real facts of the case. The portfolio may, therefore, be quite a rude affair. Any paper that is put into it is destined to get wet and torn and to require renewal several times a season, and it should, therefore, be cheap. It is always best to take the plants out as soon as possible after returning home. It is not necessary, therefore, that the paper have great absorbing qualities. It is more important that it be strong and tough, and this kind is in reality the most economical. Moderately thick and firm manila paper is, therefore, upon the whole recommended. One fact it is important to bear in mind relative to the portfolio. A plant once placed in it should never be allowed to stir afterwards until it is ready to be taken out. If it moves about or drops down upon the back of the portfolio, the leaves and flowers will become so completely wrinkled and disorganized as to be incapable of preservation. The pressure once upon it must not be relaxed. This has been a source of much difficulty, and several kinds of appliance for obviating it have been devised. Of these the best is probably that of two broad elastic straps from the two outer corners of one side, which can be carried over the leaves in which plants have been placed and attached to a ring at the center of the back by means of a snap. And yet even this form is open to objections. The time required to adjust it, though brief, involves delay in collecting, and it is liable to get out of order. I think it safe to say that practical experience in the majority of cases ultimately leads to the rejection of all such devices. I have myself for several years used nothing but an old book, 16 inches long by 10 wide, with some of the leaves left in, which I carry with my hand upon the front edge, holding the covers together. An India-rubber band around both covers is an excellent auxiliary where any considerable interval elapses between the times of collecting specimens, and it is often very convenient to put one longitudinally around one of the covers and the leaf next to the last specimen collected, which can remain, and answers the purpose of the elastic straps of the device described above. It may be added that nothing is more convenient than a small pocketful of these rubbers, which, one finds, may be used in a thousand unthought-of ways.

Besides the portfolio, the trowel, and the glass, a collector should always carry a good knife for trimming branches from trees and shrubs and for many other purposes. He should also have a tape-line, which, for measuring girths, etc., is much better than a rule, and should be of

kind that wind up with an internal spring and are not encumbered



by a crank. He should never be without twine or some kind of string, and ought to be provided with a few tags with metallic eyelets for marking the exact localities of plants which he wishes to find again. A small field-glass or spy-glass will be found a useful thing, not only in often aiding him to orient himself in his prolonged rambles in unaccustomed parts of the country, and in affording him the greatly increased pleasure of viewing his distant surroundings from certain commanding positions in which he will sometimes suddenly and unexpectedly find himself, but also as a legitimate aid in collecting; as where he desires to know in advance whether a tree contains specimens worth climbing it for, or whether a flower across a stream is familiar or new to him. An ordinary opera-glass will answer this purpose, but a stronger power is better, and may be had without increase of size if the proper search is made at the optician's.

Last, but not least, the collector needs a drinking-cup. It should fold up for the pocket, and the metallic kind is too cumbrous. Either a cup of pure rubber, that can be wadded together, or the leather kind, that folds regularly into the form of a thin, stiff card (which is the best form), should be looked for. These articles, with a memorandum book or block and a pencil or fountain pen, complete the necessary outfit of a botanist, and anything greatly in excess of these will be pretty sure to be found an encumbrance rather than aid.

For most herbaceous plants enough has already been said to guide the beginner in securing good specimens. Nearly all botanists take a pride in this, and aside from its purely esthetic aspect, it is of the first scientific importance. The plant should in all cases be represented, and as art only aims to imitate nature, so good taste coincides with the scientific requirement that the plant after collection shall resemble as nearly as possible the plant before collection.

Small annuals growing in loose soil can usually be pulled up by the roots without injury to the latter, and this is then the best course; but if the plant is very rare it is best not to trust to this, for fear of injuring the only specimen. It is but the work of a moment to insert the trowel below it and carefully shake the roots clean. Nearly all biennials and perennials require to be dug up, but this will be found less labor than might be supposed. A little practice will render any one skilled enough to take up nearly all ordinary plants with one or two strokes of the trowel. As it is impossible to tell in which direction a horizontal rhizoma may extend, it is best to strike in at some distance from the

base of the plant and at a considerable angle, so as to go beneath it. If it cannot be raised upon the trowel at the first thrust, make a similar one on the opposite side, meeting the former. In soddy ground it is often necessary to cut out a conical clod, with the plant in its center, and then remove the earth from the roots after it is taken out of the ground. This is frequently the case with *Carices*, which should never be broken off at the top of the ground.

In placing plants in the portfolio it is usually worth while to take a little pains with them. They will never again be as firm and easily placed, and if the above directions about not allowing them to move afterwards are followed, it will be found that every minute so employed will save many at the second handling. Still there is a limit of economy in this, and in many cases it is full as well to pay no further attention to the specimens than to see that they are snugly inclosed in the folds of the book. No ends should, under any circumstances, be allowed to project. Whatever portion does so is sure to be ruined; for, in the first place, it is exposed to the air and sun and dries up, and in the second place it is certain to rub against bushes and other objects and be torn and bruised. The specimens must go wholly inside the portfolio. This suggests a remark upon specimens longer than the book they are to be placed in. How is this to be done? If only a little less than twice the length, a bend in the middle is the thing required. But do not guess at the middle; place the full-lengthed plant upon the book; see that one end clears by at least an inch; then bend the stem over your finger an inch from the other end. If the stem is disposed to break, bend it over a larger object, as your knee or the palm of your hand. If it breaks, this cannot be helped, and does not materially detract from the value of the specimen. Keep the parts always together as if it had not broken. If the specimen is too long for one length, but less than twice the required length, do not bend it in the middle but nearest one end, so as to maintain the proper length. In most cases the upper should be the short end and naturally droop or lop over, but occasionally it is better to bend next the base. For specimens of more than two lengths two bends are necessary. These should be made with care in two respects: first, to see that the bends are *in the same plane*, *i. e.*, that they be so made that all three of the parts of the specimen will lie side by side upon a level surface, and, secondly, to see that they are in *opposite directions*, zigzag, or like the letter N. If care is taken in this latter particular, a three-lengthed specimen may be made to look

better than a two-lengthed one. The basal and upper sections will be upright on the sheet and be nicely joined by the middle section, forming a diagonal between them. This is as far as the process of bending usually need be carried. Plants more than four feet high are generally too large to collect entire. But sometimes it becomes important to give a specimen still a third bend, and this I very frequently do. The rule of making each angle the opposite of the one next to it must, however, be strictly adhered to in these as in all other cases, otherwise parts of the stem will be across each other and spoil the specimen. Neither must the idea be entertained that this is a matter that can be attended to afterwards; it must be correctly done in the field, and mistakes in measurements of lengths or in direction of bending can never be properly remedied in the herbarium. It is a good rule always to make specimens ample; there is more danger of getting them too meager than too full, and any one who tries some of these feats at collecting large plants entire will, afterwards, when they are dry and put away, wonder every time he sees them how small a compass they have come to occupy and what respectable-sized specimens they are.

It is never a good plan to put two different plants between the same two leaves of the portfolio. The leaves adhere to each other and become doubled, wrinkled, and matted in the effort to separate them. If the portfolio has not leaves enough to hold all the collections of a day, this of course may become necessary; but this contingency should be prevented in advance. An excellent idea is to have a portion of the book consist of firm tissue-paper, which, though not convenient for regular use, is far better than the doubling of specimens, and from the small space it occupies may be carried in sufficient quantities for an abundant reserve in any emergency.

It is better to have a systematic method in filling the portfolio during the excursion. The plants should be placed next to one another between successive leaves, and not put in at random. This, besides giving an idea of the capacity of the portfolio at any time, and showing how much has been done, is a great help in finding unoccupied space, which, when the book becomes nearly full, is very difficult where empty leaves are as likely to occur in one part as in another. But there is still another and probably greater advantage in this systematic way of collecting. It serves as an excellent memorandum of localities, etc., after getting home. I do not recommend writing labels in the field, although some do so, and it is really not to be condemned; but if your

specimens are located in your portfolio in the chronological order of their collection and you label them immediately after reaching home, there will never be any doubt as to the locality or any of the important attendant circumstances, such as you will wish to record on your label.

This latter consideration suggests a final observation relative to the collection of plants, viz., that of taking notes. There are certain facts which it is necessary to note down in the field, and this should always be done, leaning in the direction of making the record, even though you may doubt whether it is worth the trouble; still, in botany note-taking is probably less necessary than in almost any other branch of natural science, since the objects upon which you would comment are usually carried home, where the facts may be more thoroughly observed and more fully and accurately described.

Much better than the field note-book, though to some extent dependent upon this, is the botanical diary or journal, in which are recorded, after returning from each excursion, all the facts of interest observed during the day. This should be written up as soon as the day's collection is disposed of, from notes made in the field or while analyzing the plants, or from memory of the less specific events. The habit of noting down variances from the descriptions in the books while identifying the specimens is to be highly commended as leading to exact observation, and a botanist should think while he works, and inquire after the causes of phenomena, for there is a deep biological significance in every morphological peculiarity.

The beginner will do well, say the second year, to commence a private local catalogue in a separate book for the purpose, numbering each species as he identifies it. This catalogue will inevitably contain many mistakes and duplications, but it will always be very useful as well as interesting.

### 3.—PRESERVATION OF PLANTS.

The next step in the botanist's work is to preserve the specimens which he has collected. They should not be allowed to lie in the portfolio over night, but if it is impossible to attend to them all, then as many should be pressed as possible, beginning with those first collected (and this is another advantage in a methodical way of filling the portfolio). Those last collected may perhaps lie till the next morning, but if of a tender character or very juicy, it is best to slip in a dry paper on both sides of each specimen. If any require further study, and have to be left in the portfolio for this purpose, it is as well to abandon the hope

of saving these, and to press only a part of what has been collected, for several specimens of everything should be taken if they can be found. A temporary label should be written for each plant as it is reached, placed with it, and kept with it throughout. If there is more than one specimen, the temporary label will be needed for the duplicates when the other specimen is mounted. The label should give the Latin name of the plant, if known, or if only the generic name is known, then this should be written, the date of collection, and the particular locality, both habitat and station, or at least the latter. Any special fact observed in connection with the plant may also be written on the label. This done, the next step is to press the specimens.

The following is my own method of pressing plants:

The press consists of two pine boards 1 inch thick, 12 inches wide, 18 inches long, and dressed, having each two cleats on one side, one across near each end. Upon one of these a pile of plants is built. For drying paper, after trying many different kinds, I have finally adopted ordinary cheap brown wrapping-paper. The size used is 10 by 16 inches. It would perhaps be better to be larger. The double sheets (two leaves) are kept separate, by which means the thickness between each specimen may be varied *ad libitum*. Four or five sheets is the usual thickness for ordinary plants. These are placed upon the lower press-board (cleat side down), and upon them is laid a sheet of thin white paper a little larger than the brown paper. This paper is a firm but very thin manila, a little heavier than tissue-paper, but good tissue-paper would answer. Upon this sheet, which is single, the plant to be pressed is laid; its leaves are laid out neatly, and all its parts are placed in the position in which it is desirable for them always to remain. This done, a second sheet of thin white paper is laid over the plant; then another layer of four or five double sheets of the brown paper is laid on. Upon this another sheet of white paper is then laid, another specimen placed upon it and arranged for final disposition, another sheet of white paper laid over that, and another layer of brown paper upon that. This process is continued until the portfolio is emptied.

Several things are to be observed as the work of preparing the specimens for pressure progresses. The amount of brown paper used should be made to vary somewhat according to the nature of the plant. Grasses and grass-like plants require much less; succulent plants require more; thick-stemmed plants need thick layers of paper, more to preserve the even surface of the pile than on account of the amount

of moisture they exude. The pile should not be made too large, else after pressure it becomes very irregular. To obviate this and at the same time not require extra presses where the collection is large, boards without cleats and of about the size of the brown paper are occasionally inserted, and the pile continued upon these as upon the original press-board.

It often happens that the natural elasticity of freshly-collected plants renders them somewhat unmanageable, so that when laid in the desired position they refuse to remain so. In such cases the best mode of procedure is first to lay them out as well as possible and put on the white, and the layer of brown paper, and then, after this is done, placing one hand on one end of the pile and gently pressing, lift the brown and white paper with the other at the other end and roll them back. Then while holding these with one hand the refractory parts of the plant may be put in position with the other, and by beginning this operation near the middle and gradually unrolling the paper so as to let it come down upon and hold all that has been gained, one-half of the specimen may be forced to remain in its proper position. After this, the other end may be lifted in like manner, and the same process gone through with until any adjustments desired may be made and secured. This process, though somewhat awkward to describe, is in itself quite simple, and a little practice will render it easy. The results are in the highest degree satisfactory. Once properly placed, even the weight of the layer of brown papers is usually sufficient to prevent further movement, and the specimen then emerges from the press in fine condition.

All the plants being in, the next step is to put them under pressure. The other press-board is placed on the pile and a good trunk-strap put around the whole, drawn to the proper degree of tightness and buckled. How hard to press plants is still an unsettled question, and botanists differ widely upon it. My own experience has led me to make my first pressures quite light. I have lost many plants from too hard pressure at first, and while some will bear it, it is safest on the whole to avoid it. The easiest way to strap up a press full of plants is to place them on the floor and with the knee upon the upper board draw up the strap and buckle it. The buckle should be made to come on the side from you, and to be at first quite low down; as it is drawn it will rise, and should never be allowed to come up to the upper press-board. In case of large operations, two or three presses may be employed, and it is always well to have two at hand in case of need.

How long should plants remain in press? Never over twenty-four hours for the first time, and certain plants will suffer if left in so long. Much, however, depends upon the pressure. Those who press their plants hard must change them oftener. If the above suggestions are followed, it is best to change the driers at the end of twelve hours. The second time they may in most cases be allowed to remain in twenty-four hours; after this they should be changed every day for about four days. The pressure may be slightly increased after each change, and after the fourth it is usually safe and advisable to leave them in the press two days, then change and leave in two days more, under hard pressure, after which they may be taken out, the driers renewed, and the package laid aside for a week, with merely a board or a book upon it, to dry out. The plants will then be ready for the herbarium.

The process of changing the driers is more simple than that of pressing. The press is placed upon the table before you, a little to the right; the upper press-board is taken off and placed, cleats downward, on the table by the side of it, at the left; the package of dry brown paper lies on the left of these. A layer of these latter is placed on the empty press-board as in the case of pressing the plants; the upper layer of damp ones is taken from the package and laid by the side of it, at the right (a table at least five feet long is required); then the top specimen in its two sheets of white paper is carefully taken off, without disturbing the plant, and placed on the layer of dry papers. A new layer of dry papers is then placed over these, the second layer of wet ones removed from the package, and the second plant transferred in the same manner as before to the new package. This process is continued until all the plants are transferred from wet to dry papers. No amount of curiosity should tempt you to remove the upper white paper to look at a specimen. After a plant has been placed between thin papers it should never again be in the least disturbed until it is fully dry. The access of the air and the separation of the leaves and flowers from the intimate contact which pressure gives them with the thin sheets deadens the lively color which the plants otherwise will preserve, and injures the specimens. The thin paper is no perceptible obstruction to the passage of the moisture from the plant to the driers. Some, instead of using two sheets, use one folded double sheet, but this makes the process of manipulation more difficult, without any corresponding advantage. The object in having them white and a little larger than the driers is to avoid overlooking them; if smaller than the driers, one is constantly

losing plants and having them turn up in an injured condition among the wet papers.

The differences in the nature of plants will render some additional precautions sometimes necessary. It is often well after the first changing to group into one place all the thick-stemmed specimens and give them more driers, or to group all the grasses, rushes, etc., by themselves, give them fewer driers, and perhaps change them less often. Some kinds of plants can with difficulty be pressed at all, and must be for the most part dried out between papers with scarcely any pressure. This is the best way with *Opuntia*, *Sedum*, *Portulaca*, etc. Others, like *Cynthia Dandelion*, are so full of juice that very light pressure seems to disintegrate the structure and turn the specimens black. There are a few plants, such as *Gerardia*, *Buchnera*, *Herpestis*, and *Baptisia*, which are said by the books to "turn black in drying," as though this would occur whatever plan might be adopted. To some extent this is true, and yet by the above method I have dried all these plants so that the green color largely predominates in the dried specimen.

I cannot advise the purchase of patent kinds of drying paper. I have tried the best of them, and, independently of cost, I prefer the straw paper. I have also heard other experienced botanists make the same admission. Simplicity and convenience are important objects to aim at, and for most botanists economy is equally so.

The drying of damp papers is always considerable trouble, and various devices for hanging them up on frames or "horses" built for the purpose have been used. These are well, but beginners will scarcely have them, and must resort to other methods. If you have a lawn, and the weather is fine, it is best to spread them out in the sun, where they will dry immediately. The thin brown papers here recommended dry much quicker than the thicker kinds sold, and if the pains are taken to open them entirely out, the process is still further hastened. If you have only in-door facilities, the papers may be spread out over the tables, chairs, and floor, where they will usually dry in a night or a day. It is a good plan to heat them in an oven after picking them up and before using. In throwing them down they will dry faster if no effort is made to lay them in any systematic way, and no evils need be feared from their becoming rolled up and wrinkled, as this only increases the surface for the access of the air. They should, however, be picked up systematically, keeping the ends even; otherwise, they will consume much time when needed for rapid use, where they must often be picked up with one hand while the other is doing something else. .



After the plants have lain a week without pressure and become thoroughly dry, they may be taken out of the driers and thin papers and placed in the herbarium. They are usually first transferred to rough paper of some kind, either double and placed between the folds, or, as I prefer, single, and simply laid on with their labels. System is useful in all things, and many valuable specimens will be saved by observing certain rules even in such simple matters as this. The papers upon which the specimens are placed should be ample, say 18 by 12, or at least 17 by 11 inches, and should be of uniform size. Many such papers will be in constant use in the herbarium, and a reserve package should be kept on hand. They need not generally be bought, as nothing is better than common newspapers, especially if the paper is moderately strong and heavy, and nearly every one has a surplus of these; but it is well worth while to cut them to a measure. In laying off the plants the thin papers should be systematically restored to their general package without having to move them twice, and the driers released for further use. Only one or two driers will be needed for each specimen after the last change, when they are laid away to dry out. It will often happen that there are several specimens of the same plant. Of course only one label is written for these, and, therefore, they must be kept together throughout. This will be secured if the plants are changed in the systematic manner described above; but the label will sometimes be found on the upper and sometimes on the under specimen when they finally come out from the press. In putting them away it is, of course, best in such cases to have the upper specimen contain the label.

A botanist's collection always consists of two departments: the *herbarium* proper and his *duplicates*. The former he arranges in strict botanical order, sees to it that it contains a perfect specimen fully represented of every plant he has ever collected, and adds to it as many other plants as he is able to obtain through the process of exchanging, or in any other way. The latter contains a large number of specimens of each of the rarer plants of his local flora, and eventually he will add to it other rare plants obtained from other sources. It does not aim at completeness, but simply to supply a foreign demand and serve as a means of increasing and enriching his herbarium proper. As this approaches completion, therefore, the other is reduced in volume.

In putting away the fully dried plants they are accordingly divided into these two classes, a part going into the herbarium and a part to the duplicates. Where several specimens of the same plant are col-

lected, which should only be done where the plant is in demand, all but one, of course, are relegated to the duplicate department, and usually without further ceremony. Specimens selected for the herbarium, however, require still another form of treatment. They must be *poisoned*. Let no one think that this can be dispensed with. As certain as that it requires the proper cycle of seasons for it to grow, so certain will the time come when if left unpoisoned it will be devoured by the insect pests of the herbarium. Neither lay the unction to your soul that this can be done after mounting, and thus waste neat and costly glazed paper by mounting them first. The insects naturally work on the under side of the plant, where the poison cannot be applied after it is down. The labor of poisoning is, perhaps, the least pleasant of all kinds of herbarium work, but its absolute necessity should at once dispel all hopes of evading it.

There is an almost complete uniformity among all botanists as to the kind of poison to be used, the accepted substance consisting of corrosive sublimate and alcohol, the proportion being one ounce of the former dissolved in one quart of the latter diluted fifty per cent. The mode of applying it varies considerably. The use of the camel's hair brush is slow and tedious, but consumes the least poison, and may be defended on economical grounds, though not likely to be as thorough as other methods. Probably the best way, all things considered, is first to fill a trough or large platter with the poison and then dip the entire plants in the liquid, handling them with tweezers, and letting them drip before laying them aside. After poisoning, they should be immediately placed in dry papers; otherwise all the pains taken to press them nicely will be in vain, and their colors will vanish after all. This can be prevented by care, and once changing will be sufficient. It is not necessary to use regular driers for this purpose. Newspaper is good enough, and it will be found very salutary to use, for drying out the poison, sheets of paper designed for the duplicate department or for general use. The habit of the insects is to bore through the sheets on which the plants are laid. They never go round the ends of them, but eat circular tubes downward or upward through the paper until they find a suitable habitat. If all the papers in the herbarium are saturated with the poison, they find themselves greatly restricted in their operations, and as it is not usually deemed worth while to poison duplicates, it is a great protection to them to have them in poisoned papers. The temporary label should be kept with the plant throughout the poisoning as throughout every other process.

## 4.—MAKING A HERBARIUM.

The poisoning of plants is the last strictly preservative process, and we are now ready to consider the more advanced stages of botanical work necessary to the orderly disposition of the plants identified, collected, and preserved.

The usual course, upon which no useful innovation can be here proposed, is to keep each genus, unless too large, in one folded sheet of very heavy paper, called the "genus-cover," to be labeled with the name of the genus on the lower left-hand corner, and to mount the plants on fine white paper, about 16 by 11 inches in size, and place these sheets in the genus-covers. The specimens thus prepared should be kept in the latest approved order according to the natural system of classification, in cases either permanently made for the purpose or portable. These cases should consist of partitions, 13, or better, 14 inches wide, 4 or 5 inches high, and 19 inches deep, arranged one above another in several vertical tiers; these dimensions to be all in the clear, and clear of door-jambs. The doors, which should consist as much as possible of glass, should, if practicable, be so hung that when swung back the edge will be flush with the inner vertical sides of the cases, *i. e.*, leaving no shoulder for the genus-covers to catch upon in drawing them out.

The labeling of the orders is somewhat difficult on account of the perpetually growing and changing character of the herbarium. If labels or tickets are attached to the edges of the shelves, they are sure to require removal in a short time, which disfigures the cases. The best arrangement known to me to avoid these consequences and label the families is that of portable *order-covers*. These consist of good, stiff boards (paste-board) of the same width as the genus-covers and a little longer, to one end of which flaps of the same material are attached by means of strong binder's muslin pasted to both pieces, so that when the large board lies on the package of genus-covers the flap will fall down over their ends and present a vertical surface, upon which the name of the order or orders in the package is placed. The flaps will be three or four inches wide and as long as the board to which they are attached is wide. In the course of time it will often happen that orders once placed in one partition and labeled on the flap will have to be taken out and put in another. In such cases the names must of course be erased from one flap and written on another. The principal objection to this system is that it requires time and trouble to remove the order-covers every time a plant is wanted. Upon the whole, it is perhaps better to do without

order-covers entirely until the herbarium becomes quite large and complete. If the plants are kept in the natural order, you will soon become so familiar with it that you will know within one or two partitions where any plant is at any time.

It is not a mere accident that I have mentioned the general character of the herbarium before mentioning the important process of *mounting* plants. This is the finishing stroke of the whole work and should not be hastily rushed into. A plant once mounted is generally fixed for all time, and this should presuppose that it is not only known botanically, but approved as a suitable specimen to adorn a cabinet. If rare, and not likely to be found again, of course it should be mounted, even though in itself imperfect, but in so far as the local flora is concerned, this is very seldom the case.

For these and other reasons I would advise the postponement of the work of mounting until after considerable experience has been acquired in collecting and in general herbarium work. Some botanists never mount plants. They urge with considerable force that this renders them incapable of further study or examination, which any plant is always liable to require. A specimen once mounted cannot be turned over for the purpose of seeing the other side, where the two sides differ, as is generally the case. To meet this objection, such plants when mounted must be in duplicate, or so much so as to exhibit both surfaces. In the case of ferns, for example, nothing less than the mounting of two entire specimens will generally suffice.

Plants may be nicely kept without mounting by placing them in double sheets of ordinary paper, and these in genus-covers the same as if mounted. For increased safety, the fold of the species-cover may be placed in the reverse position to that of the genus-cover. The name of the species may then be written on the species-cover or on a white slip and pasted on the outside of it, to save opening any that you may not wish to examine. No two species should ever be placed in the same cover, and where it is desired to preserve several specimens of the same species these may go inside the species-cover on separate sheets of paper.

The objection to this plan as a final one is that much handling, especially after the specimens become old, breaks them up and destroys them. It is also more trouble and requires more time to open the species-covers than to look at the mounted page. In the latter case there is a quick method of looking a large genus through as you would

a book. It is held in the two hands, with the right (open) edge elevated at an angle of about  $45^{\circ}$  from the table, and while the two thumbs rapidly separate the edges of the sheets from the upper towards the lower ones the eye glances at each label attached to the lower right-hand corner of each sheet until the plant sought is reached. This would scarcely be worth mentioning were it not for the fact, as every one will early find out, that by far the greater part of the references to the herbarium will be in search of species belonging to large genera. Very large genera should be divided and kept in several genus-covers, and it is an excellent plan to write on the outside the names of all the species in a genus-cover.

Upon the whole, then, it is doubtless best to mount the specimens of the herbarium, but this should not be undertaken at first or until considerable experience has rendered one skilled in selecting the very best specimens both from a scientific and an artistic point of view. A new beginner will never afterwards regret having waited at least three years before mounting any of his plants. By this time he will have seen many other herbariums and received the specimens of other older botanists in exchange to compare with his own, and will then possess some valuable ideas on the whole subject. This, therefore, though probably the most complicated part of a botanist's work, is, when thus viewed, the one upon which the least pains need be expended in describing the process, since if the proper course is pursued from the beginning he will be sure to have already picked up nearly all the needed information respecting it before he undertakes to apply it to his own collection.

The two principal methods of mounting may, however, be briefly described. These are, first, with glue, and, second, with gummed strips. In the first case a glue-pot of rather large size, say to hold a pint of glue, or larger, is required, and a soft flat brush,  $1\frac{1}{2}$  to 2 inches in width, with which to spread the glue. The latter should be pure and white of the best quality. The glue is made very thin, so as to be in a free liquid state, and kept over a burner (gas-stove) at a temperature nearly boiling.\* The plant is first placed on a rough paper with what is to be the upper side downward, and the glue is rapidly and dexterously spread thoroughly over every part of the side that is to go down. It is then immediately turned over and laid with precision upon the

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\*The use of fish-glue, which requires no heating, is recommended by some. Although I have not tried it, and therefore do not know the objections which may exist to its use, it is certain that if otherwise equally good this must be a very strong point in its favor.

sheet of glazed white paper which is ready at hand to receive it, and in the exact position previously determined to be the best. Each specimen should be first applied to the white sheet on trial for this purpose. A dry cloth is then used to remove any excess of glue that may have been spread on the paper, and to press down any part of the plant that is inclined to lie badly; the mounted sheet is laid down at one side, a few sheets of paper (newspaper or brown paper) are laid upon it, and a board (a press-board will do) is placed upon these. Another plant is then mounted in the same manner, the board removed, the mounted plant placed on the papers previously laid down, more papers put on this, and the board restored. This process is repeated until all the plants are mounted. The mounted sheets will be ready to place in the genus-covers the next day. When the mounting is completed, the weight on the pile should be increased.

The temporary labels should be kept constantly with their plants. Final labels should not be written until the plants have been mounted. To economize time these should consist as far as possible of printed blanks. In mounting, care must be taken to leave a sufficiently large space at the lower right-hand corner for the label, and if, as often happens, more than one plant requiring separate labels go on the same sheet, room for all the labels will have to be provided for prior to mounting.

The method of mounting with gummed strips, while it perhaps requires more time and work, is in many respects a pleasanter one than that with glue. In this case sheets of the same paper used for mounting, or similar paper without lines, are gummed entire on one side with mucilage. It is cheaper to make the mucilage from pure gum-arabic by simply soaking it in the proper amount of tepid water. To this, however, it is much better to add a small quantity of glycerine, which prevents, to a great extent, the tendency of the gummed sheets to roll up at the edges on drying. To gum the sheets, lay them on a flat board or other surface and fasten each corner with a pin gently driven through the paper into the board (which should be of soft wood). It will be found a great saving of trouble to have the board just a little narrower and shorter than the sheet to be gummed, so that the mucilage can be applied to the edges without danger of sticking to the board. A brush similar to the one described for the glue is used to lay on the mucilage. The latter should not be too thick, otherwise the coating will be uneven, but at least two coats will be required to give it the proper adhesive power. The second coat is put on after the first has become dry.

If several sheets are gummed at one time, which is the best way in order to consume all the mucilage made at once, they may, when dry, be kept in a large book or under some pressure to prevent them from rolling up.

To cut the strips, shears are not to be recommended, although with skill they may be used. The difficulty will be to cut them of a uniform width. It is better to cut them with a sharp knife on a broad piece of pasteboard to a straight-edge. For this latter a thin board, six or eight inches wide and considerably longer than the sheet to be cut, is much more manageable than a narrow rule. The under surface of this board should be rough and the edge smooth. The point of the knife must be kept sharp, and it should have a thin blade. An ordinary shoe-knife is better than a jackknife or penknife. An ink-eraser is a tolerable substitute. The average width of the strips should not be over  $1\frac{1}{2}$  lines, but occasionally a wider one will be needed for thick stems. One sheet may be cut up at a time and when consumed another cut. The long strips thus cut may then be, most of them, cut into short pieces of from half an inch to two inches in length, the ordinary length required being about three-fourths of an inch. A few long strips should be left uncut for special cases as they arise.

In mounting with gummed strips, the specimens may be deliberately adjusted to the sheets and then fastened down. A wet sponge is needed to moisten the strips which are placed over the stems, peduncles, petioles, etc., wherever they are required to make the plants secure. They should generally be placed over the tips of pointed leaves, and may lie over some flowers without concealing their essential parts. In putting them down, care should be taken to bring the whole of the gummed surface into contact with the paper, except only as much as is occupied by the plant, which needs to be tightly encompassed and snugly held down to the sheet. This is best done by a pressure of the thumb-nails along both ends of the strip towards, and closely up to the plant.

As to the relative merits of the two modes of mounting, it may be said that perhaps for very large herbariums, which are in constant use, the method with glue is the best, since the tenderer parts of the plants are thus firmly held to the sheets, and not liable to be damaged. This method, however, is not sufficient in cases of terete stems, and needs to be supplemented by strips over such parts. The objection to the strip method is that it conceals some parts of the plants and makes the sheets look less natural. But if carefully and tastefully

done, this objection need not have great weight. On the other hand, it has this important scientific advantage, that if mistakes are made the plants may be taken off, and if very essential they may be removed uninjured, turned over, or studied. With many botanists these considerations preponderate largely, and it is probable that they come to have more and more weight as experience points out the defects of the glue system. For small or private herbariums, therefore, the strip system is, I think, upon the whole, to be preferred.

In mounting plants, by whatever method, a few precautions will be necessary. The majority of specimens are small enough to admit of putting two or more on a sheet. Unless very small, no two from the same locality should be mounted together, except where they differ in some important respect, which it is desired to show. But a sheet is vastly improved where specimens of the same plant, from widely varying localities, are grouped together upon it. In the course of a botanist's travels and exchanges, he will obtain duplicates of this kind. Some seem to have an idea that if they have a plant, no matter from what source this is sufficient; but a herbarium consisting of only one specimen of each species would be next to valueless, though it should thus embrace a large part of the flora of the country or the globe. Instead of putting everything into the duplicates of which you happen to have a representative, it should first be ascertained whether a new plant is from a different locality from that of any you already have mounted; if so, mount it at all events, and if possible on the same sheet. The first specimen mounted on a sheet ought to go on the right-hand side, so that its label will naturally occupy the lower right-hand corner. Without crowding it out too near the margin, care should be taken not to waste space by putting it too near the middle so as to prevent another specimen from being mounted on the left of it. If lacking in any of the particulars which should be represented, and can be obtained from the local flora, such as fruit or radical leaves, these should be procured and added to the sheet before specimens from other localities are given a place. The date, etc., of collecting these additional parts should be added to the label, or if they seem to require it, a new label may be written for them. Where only two specimens fill a sheet, one of the labels should occupy the right and the other the left corner; if three go on, the third label may occupy the middle of the lower edge of the sheet. In the case of very small plants, several specimens are needed properly to represent each plant. The lower half of the sheet may first be occupied and after-



wards, if additional specimens are obtained from other localities, they can occupy the upper half, with the labels under them in the middle of the sheet.

In fastening down the labels it is not best to gum the entire surface, as they will then roll up, warp, and assume a wry position which can never be cured afterwards. This can, it is true, be prevented by immediately putting that corner of the sheet into a clamp and leaving it there till dry, or by using heavy weights, but this is generally difficult or impracticable where a large number of labels are to be put down at one time. By gumming only a narrow portion of the upper margin of the label there will be no warping, and I recommend this plan. It is proper, however, to state the objection to it, which condemns it in the eyes of some. This is, that in handling the plants one is apt to take hold of the loose portion of the label and tear it off. I have never yet torn one, and do not think the objection serious, but at least it need not be, if the sheets are manipulated with the thumbs and near the middle, in the manner described a few pages back. If pains are taken in putting down the label to have its outer edges fall a trifle inside those of the sheet, there will be no danger of ever taking hold of the label.

##### 5.—CARE OF DUPLICATES.

Some botanists pay little attention to their duplicates, arrange them in no definite order, keep them in parcels, each summer's collection by itself, or in other unsystematized ways, and depend upon memory to hunt out anything they may want to find. This is in a high degree reprehensible, and really occasions great loss of time. Others arrange them in the alphabetical order of the genera, which is much better, but is not to be recommended. It is best to arrange them carefully, according to the natural system, the same as the herbarium.

How to label the cases of so shifting a mass has been a serious difficulty. I have heard very few plans of doing this suggested, and I think nearly all botanists leave them without labels and depend upon memory to dip in wherever they think their plant is. I will give my own method, which has worked admirably, and which eminent botanists have admired and expressed an intention to adopt.

Strips of white paper, 19 inches in length, are cut of two widths, one kind 2 inches wide, the other 1 inch. The former are used for genus-strips, the latter for species-strips. Every genus is furnished with one of the wider sort and its name is written across one end, which projects far

enough in front to leave the name in full view, and when the doors are closed this end bends down so as to present it clearly to the eye. If the genus contains only one or two species, or even three, species-strips are not used, but for all genera represented in the duplicates by four or more species, each species is also provided with a strip. Between the genus-strip and the first species a sheet of paper intervenes, so that the two strips will not lie upon each other. Single sheets are alone used to put duplicates on, and great facility is thus secured in handling them. The plants occupying each partition are placed between large-sized paste-boards, the upper one of which is thinner and more pliable than the lower. This latter feature will be found a great improvement upon the use of two stiff boards.

#### 6.—EXCHANGING SPECIMENS.

The duplicates are the botanist's stock in trade. With them he must expect chiefly to enrich his herbarium. This is done through *exchanges*. His local flora is sure to contain many things that are not to be found in some other places, and every such place will possess species which he cannot find. By notifying other botanists of what he has to exchange, he will receive offers which will be mutually beneficial to both parties. Besides having his duplicates conveniently arranged, he must also prepare and keep up a strict list or other account of them. This can best be done by marking them on the check-list of his local flora, if there be one, or on some larger catalogue embracing them all. It is well to have two copies of this, so that in case one is lost in the mails, all his labor in preparing it will not be also lost.

When fully prepared to commence exchanging, he consults the Botanical Directory and drops a brief note to each of the botanists in localities from which he desires to receive plants, inviting them to exchange, some of whom are sure to respond favorably. To such he sends his list of duplicates and requests theirs in return. His correspondents select from his list such plants as they desire, return his duplicates, and send him their lists. In like manner he selects his *desiderata* from their lists and returns them. If each wants about the same number from the other, the packages are made up and forwarded and the exchange is consummated. If there is great inequality, further negotiations are required.

In making up packages to send out, each specimen should be accompanied by a nice permanent label, such as any one would be willing to have attached to it in the herbarium of another botanist. This is chiefly

in self-protection, for unless you send good labels they will not be affixed to your specimens and you will not get credit for them; or, if affixed, they will remain a permanent reproach to you and your methods of working. To avoid extra labor, it is better to have blank labels printed with everything except the name and date. If you have rare plants in quantity to distribute, it is well to have the whole label printed for such. In a few years you will find that you will have several different kinds of duplicates for which a single blank will no longer answer, and you will want two or three kinds of blanks; *e. g.*, one for your local plants, with the locality and your own name as collector printed; one for plants collected elsewhere by yourself, with your name printed but the locality left blank, and one for duplicates received from other botanists who have wrongly neglected to send labels. For these last you should give credit to the true collector in a blank space for his name, but take credit for the specimen by having the words "Ex Herb. ——— (your own name)" printed over the top of the labels used for these cases. Where flowers and fruit are collected at different dates, this should be stated on the label, and there should be a package of blank labels with two lines for dates to be employed in such cases. If all are so printed, one of the lines will in most cases be left blank, which looks incomplete, and it is best to have most of the labels with only one line for date.

The process of "getting out" duplicates for exchange will then consist in the following steps:

Your correspondent's list of *desiderata* lies before you and you look at the first name. If he is a methodical worker it will be the one nearest the beginning of the natural system and nearest the head of your duplicates. You take out the package (all the plants in that partition) and place it on the table, find the genus or species wanted, as the case may be, on your genus or species slips, and take up and lay aside all above it; you then select your specimen, copy the name, date, etc., from the temporary to the permanent label, and place the plant and label on a separate sheet of paper, where you desire to build up the exchange package. The bottom of this package, of course, consists of a piece of paste-board and the specimens are placed on papers (newspaper) of convenient size. Some botanists use for this purpose any old torn scrap of paper or small irregular bits. This is not to be recommended, as it tends to pile up the plants too much in the middle and bend and injure the specimens. This is probably done for economy in postage, but this object can be almost as effectually secured while using papers of a uniform

size by having the whole package, boards, papers, and all, considerably narrower. Few single specimens are more than 9 or 9½ inches wide, but most packages are made 11 or 12 inches wide; this saving of two or three inches in width is very considerable, and works in all cases quite as well.

The next plant on the list of *desiderata* is then found, taken out, and labeled in the same manner, and so on until the list is exhausted. If at any time you take out the last duplicate you have, do not fail to strike it off your list of duplicates, and if you have two such lists strike it from both. The law forbids the sending of labels of which any part is written, as third-class-matter, and it is necessary to give each label a temporary number and put with the specimen a corresponding printed figure (cut out of a calendar), and to send the labels in a letter. Rather than do this I generally patronize the express companies wherever my correspondents are near one of their stations. A very sensible decision was made by Postmaster-General Key that scientific labels, bills of lading, etc., if they contained nothing irrelevant, might pass with the specimens. This ruling has since been reversed as not in harmony with the spirit of the law.\* There are cases where large packages have to go short distances, when it is more economical to send them by express.

A package to be sent by mail or by express should be securely done up. The plants are first placed between two paste-boards of uniform size and tied up with a string around the middle and each end; then a piece of heavy wrapping-paper, large enough to envelop it entirely, is put around the package in a systematic manner, drawn firmly up laterally, the ends neatly turned back, and the whole securely bound with strong twine. The twine should be in one piece and go first round the middle, then round each end, then round the middle endwise, and perhaps also three times round in this manner, once near each edge of the package. Each time that the cord crosses another it should have a turn round it, and each time it completes a circuit be secured in the approved manner. These directions are important in view of the fact that the least movement of the specimens in the package works their immediate ruin.

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\* As much doubt and uncertainty still exists on this point, I will say for the benefit of all concerned, that I called personally at the Post-Office Department (December 6, 1881), and was officially assured of the correctness of the statements herein made. It is, however, a great inconvenience to all branches of science, and operates against the Department and in the interest of the express companies. An earnest representation of the subject on the part of the large scientific bodies of the country would doubtless secure the amendment by Congress of the act in question, and this should be done.

## 7.—GENERAL REMARKS ON HERBARIUM WORK.

The herbarium is a perpetual growth. Every summer specimens of your own collecting are added to it, and every winter still more are received through exchange. Nothing ever goes out, but accessions are constantly being made. It is therefore very important to keep a strict account with it. You want to know at any moment not only what you have, but how many you have. If asked how large your herbarium is, you want to be able to answer by a glance at your account—4,000, or whatever number of species it actually contains. You also want, if any one asks you whether you have such and such a plant, to be able to reply, if not from memory, which, of course, is not always possible, by a moment's looking at something besides the specimens.

Very little herbarium work can generally be done during the collecting season. It is often necessary, and perhaps best, not to attempt to distribute current collections. After the season is over the plants collected and preserved during the summer are first all arranged in botanical order; then, beginning at the first, they are placed in two general sets, which your notes and lists enable you to make, one of which contains only new, *i. e.*, unmounted plants, and the other, specimens of species already mounted. With regard to the first of these sets, of course your duty is simple; they must be mounted and go to swell the general collection. But as to the second, it will by no means do rashly to class them as duplicates and as such put them away. Every one should be carefully compared with what you have previously collected. So rapid will be your improvement in making good specimens that you will be surprised oftentimes that you should have considered the one previously put away a good one. If, then, you have had the patience to refrain from mounting the earlier ones, it will be no trouble to substitute the later and better one. But in many cases where the first specimens were good this comparison will enable you to supply missing forms and states and help to render the herbarium perfect. After all such have been thus compared and the specimens or parts needed for the herbarium have been taken out for mounting, the remainder will constitute true duplicates to be added to your list of duplicates, and put away in their proper order in that department.

Next, as regards the winter accessions. Unavoidably there will come in packages by exchange a good many plants that you already have in your herbarium. These should be compared as above described, but, as already remarked, if from other localities than any you have, they

should be mounted. It will not do, however, to mount them without comparison with those on hand, for in the majority of cases your sheet will not be full and the new plant can be added to it, which, aside from the question of economy, is far more scientific than to have them on separate sheets.

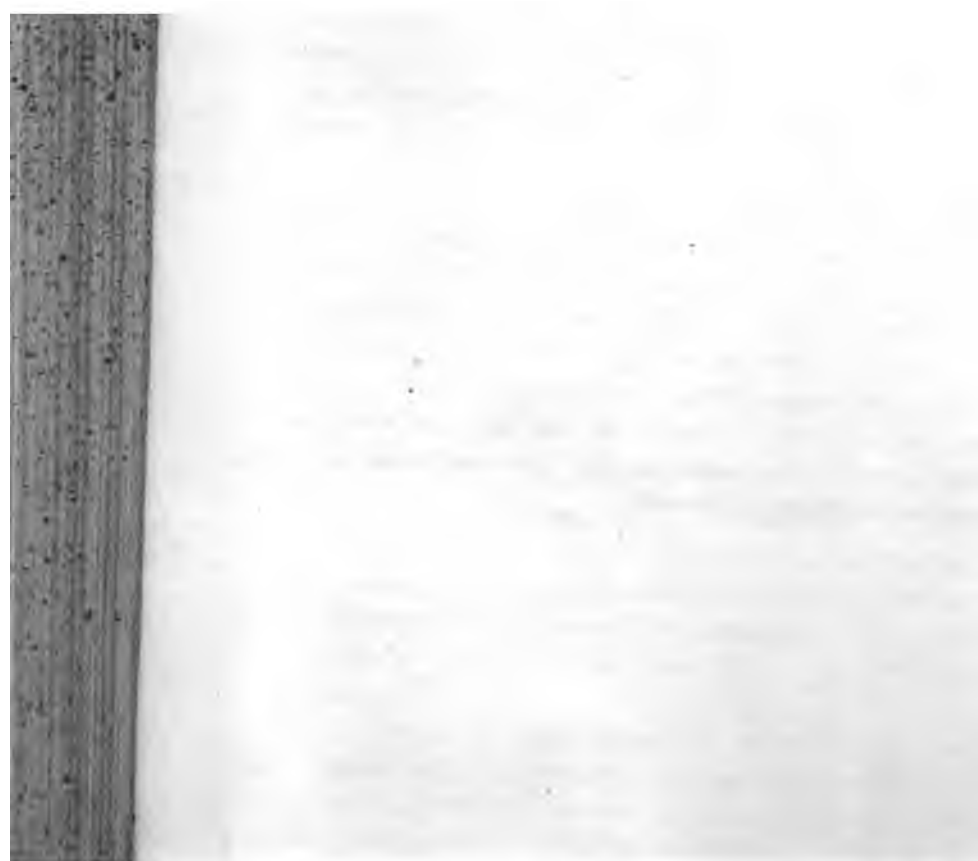
Not only with regard to summer, but to all winter accessions, the number added should be carefully noted and footed into the running account, so that the whole number in the herbarium may be at all times known. It is more difficult to have easy access to any name and be able to say with certainty whether you have it or not. Some merely mark their books and catalogues where the plants are enumerated and depend upon finding them in this way, but this is a clumsy method, not to be recommended. If there is a large comprehensive check-list, like *Mann's Catalogue*, it is well to devote one to this purpose, and so far as the plants there enumerated are concerned, this will show whether you have them or not. But you will be sure in time to get plants not found in any such check-list. Of course lists of such can be kept, and should be, but eventually they will become inconvenient. Plants will reach you of which no book in your library, and none accessible to you, contains a description. What shall be done with these? After a great amount of trouble of this kind I have found myself driven at last to the adoption of the card-catalogue system for my entire herbarium, and so charmingly does it work that I do not hesitate to commend it to the profession, and to advise beginners to commence with it and keep it up. This perhaps need scarcely be described, but I may briefly say that it consists of a drawer of cards, alphabetically arranged, on which are written the names of all the plants in the herbarium. All necessary details may be obtained by a visit to any large library and an inspection of its card system.

When a package of plants is received, or in any way comes up for final disposition, it is opened and the first specimen is examined. If already represented in the herbarium, it is put into the pile to be compared. If there be any doubt, the cards are consulted; if not found, a card is immediately written and slipped into its place in the drawer; the plant is then placed in the package to be mounted. In this way no new plant ever finds its way into the herbarium without its card having been first added to the card-catalogue.

The vast multiplicity of different objects to be handled in making a herbarium, and the variety of ways in which they require to be disposed

of, render careful work and systematic arrangement of the highest value; and in the long run the more methodical the procedure the more rapid the progress. Many of the detailed explanations above given may seem trivial and unnecessary, but they are the result of experience, acquired through unnumbered mistakes and erroneous impressions which would never have been made or entertained had there existed any systematic treatise on the art (for such I maintain that it is) of practical botany.

In conclusion, I cannot refrain from speaking a word in defense of the herbarium as an instrument of scientific culture. It is a collection of natural objects, scientifically classified and ever present for inspection. No question is so often asked the botanist by the unappreciative public as "What are you going to do with the plants?" The idea seems to be that unless you can extract some essence or elixir from them, either as a medicine, a food, or a perfume, they can be of no possible use. The most satisfactory answer I ever heard given to this query was by an amateur lady botanist, who with genuine female intuition replied, "Just what you do with your books; a herbarium is a library to be consulted, studied, and read." This is it, precisely. It is a library filled with volumes written by Nature, and which those who have learned the language of Nature can read and enjoy with a satisfaction as much keener than anything that man-made books can give as it is nearer to the source of all truth.









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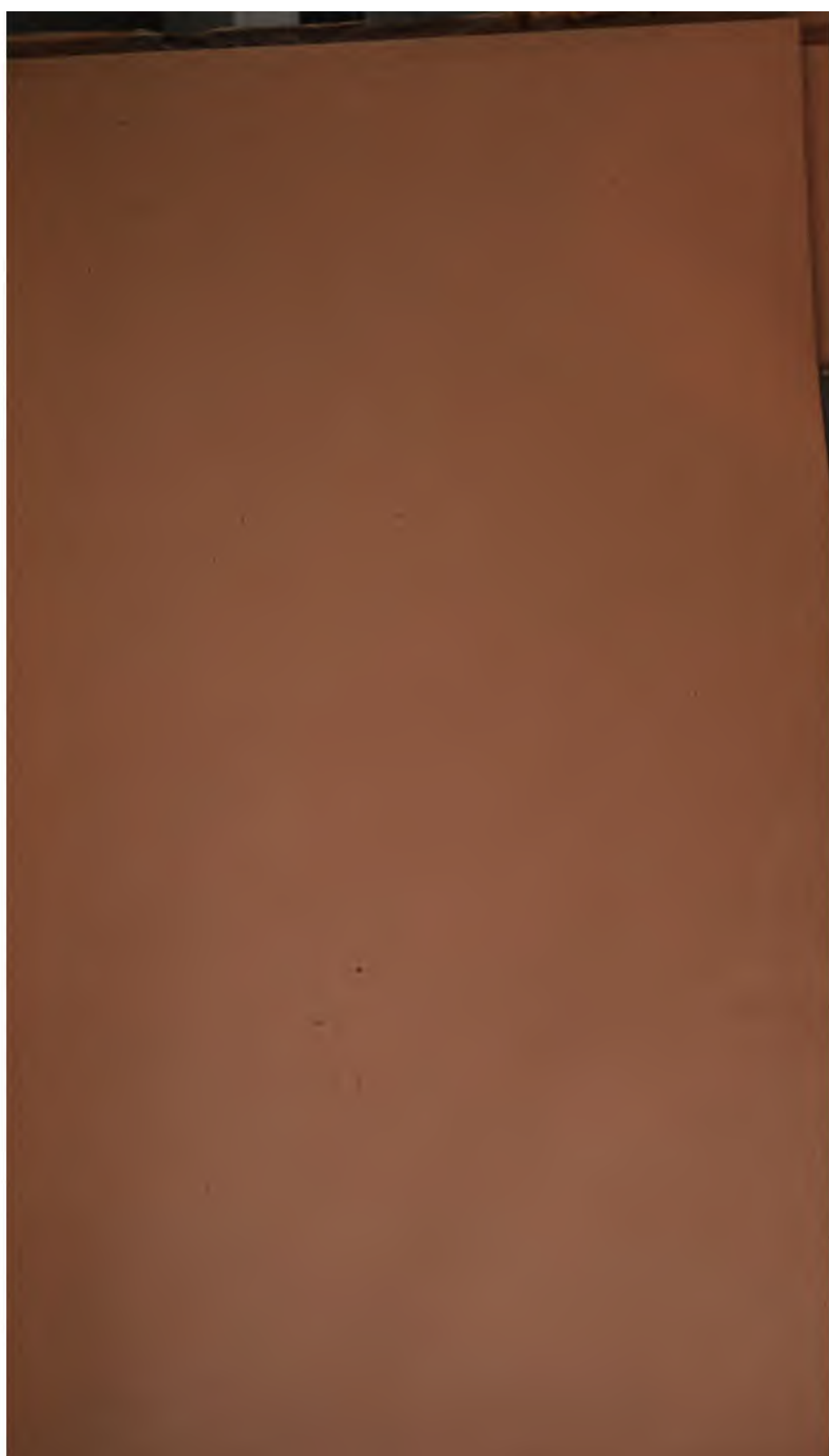
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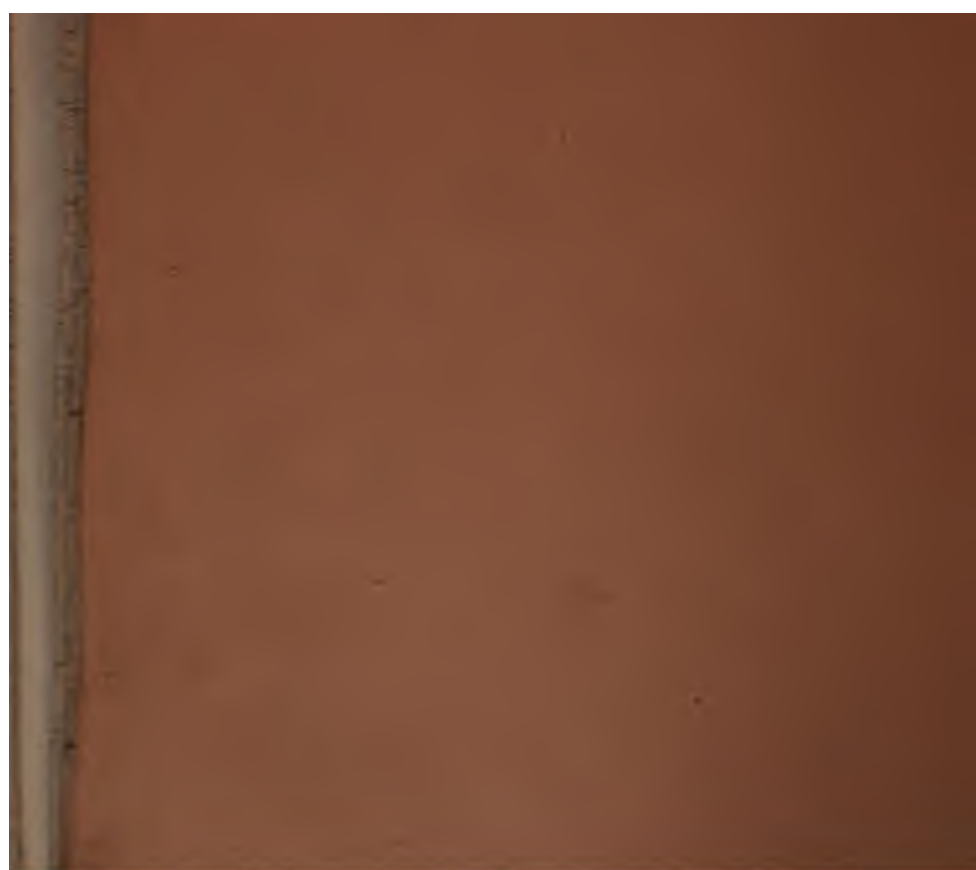
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